SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.

(AUTONOMOUS)

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AUTONOMOUS SYLLABUS 2018-2019

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DEPARTMENT OF ENGLISH

SYLLABUS 2018-2019

SEMESTER-I

1. Every unit shall state the objectives and expected deliverables.
2. Every lesson shall have
   - i) Questions on subject comprehension, paragraph, short note, single sentence answer types
   - ii) Exercises on vocabulary, syntax, and pronunciation
   - iii) Language exercises shall include exercises in paraphrasing, note-making and report writing wherever possible
   - iv) Pre -reading and post- reading activities.

Unit – I

PROSE

1. A.P. J. Abdul Kalam: The Knowledge Society (from Ignited Minds)
2. NgugiWaThiong'o: The Language of African Literature (from Decolonizing the Mind)

Unit – II

POETRY

1. Robert Frost: The Road Not Taken
2. Nissim Ezekiel: Night of the Scorpion

Unit – III

SHORT STORY

1. Mulk Raj Anand : The Lost Child
2. Henry Lawson: The Loaded Dog

Unit – IV

ONE - ACT PLAY

William Shakespeare: The Merchant of Venice (Court Scene – Act IV Scene -1)

Unit – V

LANGUAGE ACTIVITY

1. Classroom and Laboratory Activities
   - i. Single Sentence Answer Questions on Vocabulary (spelling), sound(pronunciation), sense (meaning), and syntax (usage)
2. Classroom Activity
   - i. Exercises in Articles and Prepositions
   - ii. Exercises in Tenses, Interrogatives and Question tags

Note: In classroom instruction it may be ensured that the theoretical and practical components of CSS-I complement the language activity in this semester

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DEPARTMENT OF ENGLISH
SYLLABUS 2018-2019
SEMESTER-II

Unit – I
PROSE

1. J. B.S Haldane: The Scientific Point of View
2. A.G. Gardiner : On Shaking Hands

Unit - II
POETRY

1. John Keats: Ode to Autumn
2. KishwarNaheed : I am not that Woman (from An Anthology of Commonwealth Poetry edited by C.D. Narasimhaiah)

Unit –III
SHORT STORY

1. Ruskin Bond : The Boy Who Broke the Bank
2. R. K. Narayan : Half a Rupee Worth

Unit – IV
ONE ACT PLAY

Anton Chekhov: The Proposal

Unit – V
LANGUAGE ACTIVITY

1. Classroom and Laboratory Activities
   i. Transformation of Sentences (Voice, Speech and Degrees)
   ii. Dialogue Practice (Oral)
   iii. Listening Comprehension

2. Classroom Activity
   i. Guided Composition
   ii. Dialogue Writing
   iii. Reading Comprehension

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DEPARTMENT OF ENGLISH
SYLLABUS 2018-2019
SEMESTER-III

GENERAL ENGLISH SYLLABUS
FOR B.A/B.Com/B.Sc COURSES under CBCS

SEMESTER –III

Unit – I
PROSE

1. M.K. Gandhi: Shyness My Shield (from The Story of My Experiments with Truth)
2. Alexis C. Madrigal: Why People Really Love Technology: An Interview with Genevieve Bell

Unit – II
POETRY

1. Gabriel Okara: Once upon a Time
2. Seamus Heaney: Digging

Unit – III
SHORT STORY

1. JhumpaLahiri: The Interpreter of Maladies
2. Shashi Deshpande: The Beloved Charioteer

Unit – IV
ONE ACT PLAY

GurajadaAppa Rao: Kanyasulkam, translated by C. Vijayasree& T. VijayaKumar (Acts I & II)

Unit – V
LANGUAGE ACTIVITY

1. Classroom and Laboratory Activities
   i. JAM Sessions
   ii. Note Taking
   iii. Reporting for the Media
   iv. Expansion of an idea
2. Classroom Activity
   i. Transformation of sentences (Simple-Complex-Compound Sentences)
   ii. Note Making
   iii. Report Writing
   iv. Writing for the Media

Note: In classroom instruction it may be ensured that the theoretical and practical components of CSS-II complement the language activity in this semester.

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DEPARTMENT OF TELUGU
SYLLABUS 2018-2019
GENRAL TELUGU
COMMON FOR BA/B.COM/B.SC
Semester-I

I.PRACHEENA KAVITWAM:

A. **NANNAYA: Gangashanthanulakatha**

Andramahabharatham – adiparvam –nalgavaaswasam - (120-165)

`` naravarudagushanthanunaku'' nundi ``divyabhushanalamkrutha'' varaku

B. **THIKKANA: Dropadiparidevanam**

Andhramahabharatham – udyogaparvamtrutiyaswasam – (100 -125)

``dhrmanandunupalukulu'' nundi ani yuradilagabalikina'' varaku.

II.ADHUNIKA KAVITWAM:

A. **Gurajada –Kanyaka**
B. **SreeSree - Deshacharitralu**

III. KADHANIKALU:

A. **Papinenisivashankar -Chinthalatopu.**
B. **Bandinarayanaswami – Savukudu.**

IV. VYAKARANAM:

A. **SANDHULU: Savarnadeerga, guna,vruddi, yanadesha, trika, ga.sa.da.da.vadesha, rugaagama, tugagama, amreditha, athwa, ithwa, uthwa, sandhulu.**
B. **SAMASALU: Tathtpurusha, karmadaaraya, dvamdva, dvigu, bahuvreehee.**
C. **AKSHARADOSHALU: Doshalusarididdisaadhurupalurayali.**

V. VIDYARTI KRUTYALU:

SreeSreekavithadeshacharitralakusambandichinaperadilanusekarinchandi Mutyalasaraaluchandasularachanalucheseprayatnamcheyandi. AanaatiDroupadiparisthithiprasthuthasamaajaparisthithikianvainchandi (Painasuchinchinavidyaarthikruthyaalukonnivudaaharanalumaatrame, ituvantivimarinniprayatninchagalaru).

DEPARTMENT OF TELUGU
SYLLABUS 2018-2019
GENRAL TELUGU
COMMON FOR BA/B.COM/B.SC
SEMESTER - II

I.PRAACHEENA KAVITWAM:

A. **Durjati – Saayujyamu**

SrikalahasthiMahatyam – Dwithiyaaswaasam (109 -139)

B. **ChemakuraVenkatakavi – Subhadra Parinayam**

Vijaya vilaasam – moodavaaaswaasam (93 -139)

II. AADUNIKA KAVITWAM:

A. **Jaashuva – Piradousilekha (Aasulthan… nundi "Anuchulikinche" varaku)**
B. **Geddaku Satyam – Chettukandika 1 – 25 padyaalu (KavithaaVaijayanthiPadyaSankalanamNundi)**

III. KATHANIKALU:

A. **KethuViswanaathareddy - NammukunnaNela**
B. **MuppalaRanganayakamma – AmmakuAadivaaramleda?**

IV. NAVALA:

Dr. V.R. Raasaani – Bathukaata

V. VIDYAARTHI KRUTHYALU:

1. **Subhadra VivaahaAachaarulu – EenaatiVivaahaAachaaraluThulanaathmakangaaPariseelinchaali.**
2. **MeekuNachina Oka Chettukusambandinchinapurthisamaachaaraannisekarinchandi.**
3. **Mee inti nepadyamloAmmalakuAadivaaramundoledookasangatanaaadhaarangakatharaayandi.**
4. **NammukunnanelakathaloniRaithulagaadhalanuchitraalathodinapatrikalaaadharangasekarinchandi.**

DEPARTMENT OF TELUGU
SYLLABUS 2018-2019
GENRAL TELUGU
COMMON FOR BA/B.COM/B.SC
SEMESTER - III

I- PRAACHINA KAVITHWAM:

1. ***Pothana – Vaamanaavatharam***
2. ***AandhraMahabhagavatham 8 vaskandam (582 – 621)***
3. ***Koravigoparaju – SalivaahanaVijayam***
4. ***SimhaasanaDwaathrimsika – 1va Aaswaasam (115 -165)***

II- AADHUNIKA KAVITHWAM:

1. ***Kusuma Dharmanna – Harijana*Sathakamu (1 -20)**
2. **Rayaprolu Subbarao – SankraanthiSambaram – Misramanjarilonchi – "AiduLakshalaAravaDedulu" nundi "Mangalam SankraanthiSaamethi" varaku.**

III- GADYA BHAAGAM (VYAASA SAMPUTI)

1. **AacharyaGujjarlamudiKrupaachaari – Telugu Bhasha.**
2. **AacharyaRachapalyam Chandrasekhar Reddy VyakthithwaVikasam.**

IV- CHANDASSU – ALANKAARAALU

1. **Handassu – Uthpalamaala, Champakamaala, Saardulam, Mathebham, Kandam, Tetageethi, Aataveladi.**
2. **Alankaaraalu – Upama, Rupaka, Uthpreksha, Swabhavokthi, Athisayokthi, Ardaantharanyaasa, Drustaantha, Sabdaalankaaralu.**

V- VIDYAARTHI KRUTHAALU:

1. **Telugu Vaaralu, Thidulu, Nakshathralu, SamvacharalaPerluNerchukondi.**
2. **Meevyakthitwaannimeeruyevidangaameruguparuchukuntunnarovyasamrayandi.**
3. **Anthyanupraasaalankaramlookakavithanusonthangarayandi.**

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DEPARTMENT OF HINDI
SYLLABUS 2018-2019
GENRAL HINDI
COMMON FOR BA/B.COM/B.SC
Semester -I

I – Gadyasandesh(Prose)

1.SanskruthiAur Sahitya Ka Paraspar Sambaundh

2. Bharath ek Hai

3.H.I.V (AIDS)

4. Katha Lok (Short Story)

II- Katha Lok (Short Story)

1. **Zariya**
2. **BhookHadthal**
3. **Parmathma Ka Kutta**

III- Vyakaran (Grammar)

1. **Karyalayeen Hindi (Changing Administrative Terminology Hindi to English and English to Hindi)**

IV- Vyakaran (Grammar)

1. **AppnevakyonmeishabdhProyogkaryalayi Hindi (Hindi se English)**

Sndivichedhi

V- Patralekhan (Letter writing)

1. **Aavedan Patra**

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DEPARTMENT OF HINDI
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GENRAL HINDI
COMMON FOR BA/B.COM/B.SC
Semester -II

I- Gadyasandesh (Prose)

1. **Sahitya kiManatta**
2. **Sachi veeratha**
3. **Mitratha**

II- Kathalok (Short Story)

1. **Mukthidhan**
2. **Goodad Sai**
3. **UsneKahatha**

III- Vyakaran (Grammar)

1. **Ling, Vachan, Kal, Vachya, VakyonkiShuddi**

IV- Vyakaran (Grammar)

1. **ShabdhPrayug**
2. **Karyalayeen Hindi (ParibhashikShabdavali English se Hindi)**
3. **VilomeShabdh.**

V- Patra lekhan (Letter Writing)

1. **VyakthigathAurSarkari Patra.**

DEPARTMENT OF HINDI
SYLLABUS 2018-2019
GENRAL HINDI
COMMON FOR BA/B.COM/B.SC
Semester -III

I- Kavyadeep 9 Ancient and Modrern Poetry)

1. **Kabeerdas-sakhee (1 to 10)**
2. **Soordas ka Bal Varnan**
3. **Mathra Bhoomi**
4. **ThodthiPaltav**
5. **GeethFarosh**

II- Hindi Sabitya Ka Ethihas (Histrory of Hindi Litraturer)

1. **Bhakthikal**

   Gnanasrayi- Kabeer

   Pvemasrayi-Jayasee

III- SadhavanNibandh (General Essays)

1. **Samachar Patra**
2. **BearikiSamasya**
3. **Computer**
4. **ParyavaranAurPradooshan**
5. **Sahitya AurSamaj**

IV- Anuvaad (Translation)

1. **AnuvaadAbyas English se Hindi (Four or Five Lines)**

V- Prayojanmoolak Hindi (Functional Hindi)

1. **Paripalna**
2. **Gnapan**
3. **Soochana.**

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DEPARTMENT OF URDU

SYLLABUS 2018-2019

GENRAL URDU

COMMON FOR BA/B.COM/B.SC

PART- I (B) URDU

SEMESTER - I

(Common to B.A/B.Com/B.Sc/BBA)

Paper I : POETRY

UNIT –I
1. GHAZAL
MEER –Ulti ho gayeen sab tadbeeren
2. NAZM
IQBAL –Naya Shivalah

UNIT –II
1. GHAZAL
GHALIB –Ye na thi hamari khismat
2. NAZM
Akbar Ilahabadi –Nasihat-e-Aqlaaqi

UNIT –III
1. GHAZAL
HALI –Uske jate hi ye kya ho gayee ghar ki surat
2. NAZM
FAIZ –Mujhse pehli si muhabbat meri mehboob

UNIT –IV
1. GHAZAL
YASEER KURNULI–Rafeeq-o-hamnafas
2. NAZM
AKHTARUL IMAAN –Khabr

UNIT –V
1. GHAZAL
RAHI FIDAYI–Apni tareeq ke raqim ke live
2. NAZM
IQBAL QUSRO –Izn-e-Aam

Prescribed book: MUNTAKHAB ADAB –I

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SEMESTER - II

Common to B.A/B.Com/B.Sc/BBA

Prose

Unit-I

Mazmoon 'Behas-o-Takrar' – Sir Syed

Unit-II

Afsana ' Toba Tek Singh' –Manto

Unit-III

Drama ' Gud ki Makhiyan' – Kareen Rumani

Unit-IV

Muraqqa 'Ustad-e-Muhatarram Zore Sahib' – Sulaiman Athar Jaweed

Unit-V

Inshaiya 'Padiye gar beemar' – Mushtaq Ahmed Yusufi

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GENRAL URDU

COMMON FOR BA/B.COM/B.SC

Prose and Poetry

UNIT – I Dastan – Mir Amman– Bagh-o-Bahar-AghazKhisse ka

UNIT–IIKhutooteGhalib–BanaamMirMehdiMajroohAur Hatim AliMehar

UNIT – III Masnavi – IbneNishati – Phoolbun – Aaghaze Dastan - 21 Sher

UNIT–IVMarsiya–MeerAnees– JabQatakimasafateshabaaftabne(Ibtidayi6bandmusaddaske)

UNIT – V Rubaiyaat

1. AmjadHyderabadi–'Harcheezkakhonabhi'
2. SagharJayyedi–' Tareefkimeezaan pe tuljatehain

Prescribed Book: MUNTAKHAB ADAB –II

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DEPARTMENT OF ENGLISH

SYLLABUS 2018-2019

I B.A SPECIAL ENGLISH

I SEMESTER

I Year, Semester I, Paper - I:

An Introduction to English Language and Literature-I

Unit	Module	Topic	Marks
1	History of English Literature	Old English and Middle English Periods	20 marks (2 Essays)
2	Philology	History and Development of the English Language (Scandinavian, Latin,Greek, French influences, Native Resources and other influences)	20 marks (4 paragraph questions)
3	Literary Forms and Terms	Ballad, epic,romance,lyric,ode,elegy, pastoral elegy, sonnet, rhyme, meter, mystery / miracle plays, morality play, metaphysical conceit	15 marks (3paragraph questions)
4	Poetry	John Donne: ***Death, be not Proud***	10 marks (1 essay)
5	Prose	Francis Bacon: Of Studies	10 marks (1 essay)
Internals : 25			Total marks: 100

Recommended Reference books

1. ***A History of English Literature*** by W.J Long
2. ***A Critical History of English Literature*** by David Daiches (Published by Supernova)
3. ***The Cambridge History of English Literature*** by Ward and Waller (Published byKessinger)
4. ***A Glossary of Literary Terms*** by MH Abrams (Published by Cengage)
5. ***The Penguin Dictionary of Literary Terms and Literary Theory*** by J.A. Cuddon(Published by Penguin)

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DEPARTMENT OF ENGLISH

SYLLABUS 2018-2019

I B.A SPECIAL ENGLISH

II SEMESTER

I Year, Semester II, Paper-II:

Unit	Module	Topic	Marks
1	History of English Literature	Renaissance(Elizabethan and Jacobean – 15th& 16th Century)	20 marks (2 Essays)
2	Literary Forms and Terms	Simile, metaphor, personification, alliteration, apostrophe, hyperbole, allegory, allusion, anti-climax, irony, blank verse, tragedy, comedy, tragic-comedy, chronicle play, masque, comedy of humours, farce	15 marks (3paragraph questions)
3	Drama	William Shakespeare:***Twelfth Night***	20 marks (2 Essays)
4	Poetry – I	1.Thomas Gray:***Elegy Written in a Country Churchyard***	10 marks (1 essay)
5	Prose - II	John Milton: ***Extract from book IX - Fall of Adam and Eve***	10 marks (1 essay)
Internals : 25			Total marks: 100

An Introduction to English Literature II

Recommended Reference Books

1. ***A History of English Literature*** by W.J Long
2.A Critical History of English Literature by David Daiches (Published by Supernova)
3.The Cambridge History of English Literature by Ward and Waller (Published byKessinger)
4.A Glossary of Literary Terms by M.H Abrams (Published by Cengage)
5.The Penguin Dictionary of Literary Terms and Literary Theory by

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DEPARTMENT OF ENGLISH

SYLLABUS 2018-2019

II B.A SPECIAL ENGLISH

III SEMESTER

PAER III

Unit	Module	Topic	Marks
1	History of English Literature	Restoration and Augustan Periods (17th and 18th Centuries)	20 marks (2 Essays)
2	Literary Forms and Terms	Satire, mock-epic, heroic couplet, epistle, heroic tragedy, comedy of manners, genteel comedy, sentimental comedy, periodical essay,	15 marks (3paragraph questions)
3	Poetry	Alexander Pope: Extracts from ***The Rape of the Lock,*** canto-1	20 marks (2 Essays)
4	Prose	Daniel Defoe: ***Robinson Crusoe***	10 marks (1 essay)
5	Drama	William Congreve: ***The Way of the World***	10 marks (1 essay)
Internals : 25			Total marks:100

II Year, Semester III, Paper-III:

An Introduction to English Language and Literature III

Recommended Reference Books

1. ***A History of English Literature*** by W.J Long
2. ***A Critical History of English Literature*** by David Daiches (Published by Supernova)
3. ***The Cambridge History of English Literature*** by Ward and Waller (Published byKessinger)
4. ***A Glossary of Literary Terms*** by MH Abrams (Published by Cengage)
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DEPARTMENT OF ENGLISH

SYLLABUS 2018-2019

II B.A SPECIAL ENGLISH

IV SEMESTER

PAER IV

Unit	Module	Topic	Marks
1	History of English Literature	Romantic and Victorian Periods	20 marks (2 Essays)
2	Literary Forms and Terms	biography, autobiography, melodrama, historical novel, sentimental novel, gothic novel, regional novel, flat character, round character, protagonist,antagonist	15 marks (3paragraph questions)
3	Poetry1	John Keats: ***Ode to a Nightingale***	10 marks (1 essay)
4	Prose	Jane Austen: ***Pride and Prejudice***	20 marks (2 Essays)
5	Poetry 2	Robert Browning: ***How do I Love thee?***	10 marks (1 essay)
Internals : 25			Total marks:100

II Year, Semester IV, Paper-IV:

An Introduction to English Literature IV

Recommended Reference Books

1. ***A History of English Literature*** by W.J Long
2. ***A Critical History of English Literature*** by David Daiches (Published by Supernova)
3. ***The Cambridge History of English Literature*** by Ward and Waller (Published byKessinger)
4. ***A Glossary of Literary Terms*** by MH Abrams (Published by Cengage)
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DEPARTMENT OF URDU

SYLLABUS 2018-2019

I B.A. ADVANCEL URDU

I SEMESTER

First year Optional Urdu

SEMESTER - I

First year Optional Urdu Paper - I
URDU PROSE
Afsanavi Adab aur Drama

UNIT – I	**Novel**	**-**	**Taaruf aur Irteqa**
UNIT – II	**Novel 'Nirmala'**		**by Premchand**
UNIT – III	**Afsana**	**-**	**Taaruf aur Irteqa**

UNIT – IV **Urdu Afsane edited by Raziya Sajjad Zaheer.**
The following short stories only:

1. **'Woh' by Balraj Menra**
2. **'Computer Isq' by Joginder Pal**
3. **'Lal aur Peela' by K.A.Abbas**
4. **'Mom ki Mariyam' by Jeelani Banu**
5. **'Allah de Banda le' by Raziya Sajjad Zaheer**

UNIT – V **Drama 'Darwaze Khol Do' by Krishan Chander**

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SYLLABUS 2018-2019

I B.A. ADVANCE URDU

SEMESTER - II

First year Optional Urdu Paper - II

URDU PROSE

Ghair Afsanavi Adab

UNIT – I	**SAFARNAMA - 'Bullet Train mein kabhi na baitho' by Mujtaba Hussain**
UNIT – II	**KHAKA - Taaruf aur Irteqa**
UNIT – III	**Khaka - ' Dr.Abdul Haq marhoom' by Rasheed Ahmed Siddiqui.**
UNIT – IV	**INSHAIYA - Taaruf aur Irteqa**
UNIT – V	**Inshaiya – 'Jheengar ka Janaza' by Khwaja Hasan Nizami**

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DEPARTMENT OF URDU

SYLLABUS 2018-2019

II B.A. ADVANCE URDU

III SEMESTER

PAER III

URDU POETRY

Prescribed book :GowhareAdab by A.P.UrduAcademy

UNIT– I MASNAVI – A portion of Gulzar-e-Naseem 'Aanatajulmulookka sehraetilismse'

UNIT– II GHAZAL – The following Ghazalsonly:
1.'Bas kedushwarhaiharkaam' by Ghalib
'Wohadaedilbari hokenawae' by Jigar
'Jalakemashalejan hum' by Majrooh

UNIT– III NAZM
'Roohearziaadam ka isteqbalkartihai' By Allama Iqbal
'Sagar kekinare' by Maqdoom

UNIT– IV Ghazalgoshorakisawaneh
1.Ghalib 2.Jigar3.Majrooh

UNIT– V Nazmgoshorakisawaneh
1.Allama Iqbal 2.Maqdoom

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SYLLABUS 2018-2019

SEMESTER - IV
SECOND YEAR ADVANCE URDU PAPER - IV

URDU POETRY
Prescribed book :GowhareAdab by A.P.UrduAcademy

UNIT– I	**QASEEDA –Ta'aruf**
UNIT– II	**QASEEDA – Mohsin Kakori (Selected portion) 'Simtekashi se chalajanibemathurabadal'**
UNIT– III	**MARSIYA –Ta'aruf**
UNIT– IV	**MARSIYA – Meer Anees (Selected portion) 'Namakekhwanetakallumh aifasahatmeri'**
UNIT– V	**Biography of following poets: 1.MohsinKakori 2. MeerAnees**

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DEPARTMENT OF HISTORY

SYLLABUS 2018-2019

B. A. HISTORY

I Year B. A. Programme (UG) Courses – Under CBCS

Semester – I

Paper – I (Core Paper) **ANCIENT INDIAN HISTORY & CULTURE (from earliest times to 600 A.D)** ***(Indian History and Culture from Earliest Times to 647 A.D)***

Unit – 1	Survey of Sources: Literary & Archaeological Sources; Influence of Geography on History; Unity in Diversity; Traces of Stone Age Cultures (Circa 3,50,000 B. C to 3,000 B. C); Indus Valley Civilization (Circa 3000 B. C to 1,500 B. C): Origin, Extent, Salient Features.
Unit – II	Vedic Age & Religious Reform Movements (Circa 1500 B. C to 600 B. C): Society, Polity, Economy, Culture during early and later Vedic period; Jainism and Buddhism: Causes, Doctrines, Spread, Importance and Impact.
Unit - III	Transition from Territorial States to Emergence of Empires (Circa 600to Century to 300 B. C): Rise of Mahajanapadas – Causes for Magadha's Success; Persian and Macedonian Invasions; Mauryan Empire: State, Imperial Administration, Economy, Ashoka'sDhamma, Art & Architecture, Significance & Downfall.
Unit - IV	Conditions during 200 B. C to 300 A. D.: Central Asian Contacts – Kushanas – Aspects of polity, society, Economy, Religion, Art& Architecture; The Age of Satavahanas: Pattern of Administration – Social, Economic, Religious & Cultural Developments; Sangam Age: The Three Early Kingdoms (Chola, Chera& Pandya) – Society, Language & Literature.
Unit – V	India between 300 A. D & 600 A. D.: The Rise and Growth of Guptas: Administration, Society, Economy, Religion, Art, Literature and Science & Technology – Decline.

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DEPARTMENT OF HISTORY

SYLLABUS 2018-2019

B. A. HISTORY

B. A. HISTORY

I Year B. A. Programme (UG) Courses – Under CBCS

Semester – II

Paper – II (Core Paper)

EARLY MEDIEVAL INDIAN HISTORY & CULTURE (600 A.D to 1526 A. D.)

(Indian History and Culture from 647 to 1526 A.D)

Unit – 1	Harsha & His Times: Administration, Religion – Hiuen Tsang -Polity, Society, Economy and Culture from 7th to 11th Century A. D. under Chalukyas of Badami& Eastern Chalukyas of Vengi.
Unit – II	Age of later Pallavas during 7th& 8th Centuries A. D.: Contribution to Cultural Development & Art & Architecture; The Chola Empire from 9th to 12 Century A. D.: Rise of the Empire, Administration and Cultural Life.
Unit - III	Conditions in India on the eve of Turkish Invasions; Early Invasions: Traces of Arab Invasion, Ghazni&Ghori: Delhi Sultanate (1206 to 1290 A.D.) under Slave Dyanasty.
Unit - IV	Delhi Sultanate (1290 to 1526 A.D.): Khaljis: Expansion & Consolidation, Administrative & Economic Reforms - The Tughlaqs - Decline & Disintegration of the Delhi Sultanate; Administration, Society, Economy, Technology, Religion, Art & Architecture under the Sultanate.
Unit – V	Cultural Development in India between 13th& 15th Centuries A. D.: Impact of Islam on Indian Society and Culture – Bhakti and Sufi Movements – Emergence of Composite Culture.

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DEPARTMENT OF HISTORY

SYLLABUS 2018-2019

B. A. HISTORY

I IIYear B. A. Programme (UG)

Courses – UnderCBCS Semester –III

Paper – III (Core Paper)

LATE MEDIEVAL & COLONIAL HISTORY OF INDIA (1526 to 1857 A. D.)

(History and Culture of India (1526 – 1857))

Unit – 1	**India from 1526 to 1707 A. D.: Emergence of Mughal Empire - Sources, Conditions in India on the eve of Babur's invasion, Brief Summary of Mughal Polity – Sher Shah & Sur Interregnum – Expansion & Consolidation of Mughal Empire – Rise of Marathas &Peshwas.**
Unit – II	**Administration, Economy, Society and Cultural Developments under the Mughals – Disintegration of Mughal Empire.**
Unit - III	**India under Colonial Hegemony : Beginning of European Settlements – Anglo-French Struggle – Policies of Expansion - Subsidiary Alliance & Doctrine of Lapse - Consolidation of British Empire in India up to 1857 A. D.**
Unit - IV	**Economic Policies of the British (1757-1857): Land Revenue Settlements – Commercialization of Agriculture – Impact of Industrial Revolution on Indian Industry ; Administration of the Company – Regulating Charter Acts; Cultural & Social Policies: Humanitarian Measures & Spread of Modern Education**
Unit – V	**Anti-Colonial Upsurge –Peasant & Tribal Revolts - 1857 Revolt – Causes, Nature& Consequences.**

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DEPARTMENT OF HISTORY

SYLLABUS 2018-2019

B. A. HISTORY

II Year B. A. Programme (UG) Courses

– UnderCBCS Semester –IV

Paper – IV (Core Paper)

SOCIAL REFORM MOVEMENT & FREEDOM STRUGGLE (1820 to 1947 A.D.)

(History and Culture of India (1857 – 1947))

Unit – 1	**Social, Religious & Self-Respect Movements: Social & Cultural Awakening – Brahma Samaj, Arya Samaj, Theosophical Society, Ramakrishna Mission, Aligarh Movement – Emancipation of Women – Struggle Against Caste: JyotibaPhule, Narayana Guru, Periyar, Dr. B. R. Ambedkar.**
Unit – II	**Growth of Nationalism in the 2nd Half of 19th Century – Impact of British Colonial Policies under Viceroys' Rule and the Genesis of Freedom Movement – Birth of Indian National Congress.**
Unit - III	**Freedom Struggle from 1885 to 1920: Moderate Phase — Partition of Bengal - Emergence of Militant Nationalism –Swadeshi & Boycott Movement – Home Rule Movement.**
Unit - IV	**Freedom Struggle from 1920 to 1947: Gandhiji's Role in the National Movement – Revolutionary Movement –Subhas Chandra Bose.**
Unit – V	**Muslim League & the Growth of Communalism – Partition of India – Advent of Freedom - Integration of Princely States into Indian Union – SardarVallabhai Patel.**

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DEPARTMENT OF ECONOMICS

SYLLABUS 2018-2019

BA Economics Syllabus under CBCS

I Year B. A. Programme (UG) Courses – Under CBCS

Semester – I

Paper – I (Core Paper)

Micro Economics – Consumer Behavior

Module -1

Nature, definition and scope of Economics - Wealth, Welfare, Scarcity and modern definitions.

Module -2

Methodology in Economics - Micro & Macro; Static and Dynamic analysis; Normative and positive science, Inductive & Deductive methods; Partial and general Equilibrium.

Module - 3

Utility analysis: - cardinal approach-The Law of diminishing Marginal utility- The Law of Equi-Marginal Utility- concept of consumer's surplus

Module - 4

Demand analysis - Law of Demand - Elasticity of Demand - Measurement of Elasticity of Demand - Price, Income & Cross Elasticities of Demand.

Module - 5

Ordinal Approach: Indifference Curve analysis - Properties of Indifference curves - Price or budget line - Equilibrium of the Consumer with the help of Indifference curves – Samuelson's Revealed preference theory.

REFERENCES:

1. R.G. Lipsey and K.A.Chrystal - "Economics", Oxford University Press, 10/e, 2004.
2. P.A.Samuelson & W.D. Nordhaus-"Economics", Tata Mc.Graw Hill, 18/e, 2005.
3. N.Gregory Mankiw-"Principles of Economics", Thompson 2015 .
4. H.L.Ahuja-"Advanced Economic Theory"' S.Chand.
5. M.L.Seth-"Micro Economics", Laxmi Narayana Agarwal, 2015.
6. Bilas, A.-"Micro Economic Theory", International Student Edition, Mc.Graw Hill, 1971.

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DEPARTMENT OF ECONOMICS

SYLLABUS 2018-2019

B. A. ECONOMICS

I Year B. A. Programme (UG) Courses – Under CBCS

Semester – II

Paper – II (Core Paper)

Micro Economics - Production and Price Theory

Module - 1

Production function-Concept of homogeneous production function-Cobb- Douglas Production function- Law of variable proportions-Law of Returns to Scale - Different Concepts of Costs – Explicit & Implicit, Opportunity, Total – fixed and Variable Costs, Marginal & Average Costs & its Relationship. Concept of Revenue – Total, Marginal & Average Revenue and Break – Even Point

Module - 2

Analyse different types of Market structures - Perfect Competition - Price determination and equilibrium of firm and industry under perfect competition - Monopoly - Price determination - Price discrimination.

Module - 3

Monopolistic competition - price determination - Oligopoly - Kinked demand curve approach.

Module - 4

Marginal Productivity theory of distribution - Theories of wage determination Subsistence theory of wages, Standard of living theory of wages, Modern theory of wages Wages and collective bargaining - concept of minimum wage.

Module - 5

Theory of Rent: Ricardian theory of rent - Quasi rent concept of Alfred Marshall. Theories of Interest - Classical, Neo-classical and Keynes Liquidity Preference theory - Profit - dynamic, innovations, Risk and Uncertainty theories.

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DEPARTMENT OF ECONOMICS

SYLLABUS 2018-2019

B. A. ECONOMICS

II Year B. A. Programme (UG) Courses – Under CBCS Semester – III

Paper – III (Core Paper)

Macro Economics - National Income, Employment and Money

Module - 1

Meaning, definition of Macro Economics - Importance of Macro Economics- Difference between Micro and Macro Economics - Paradox of Macro Economics -Limitations

Module - 2

National Income - Definitions, Concepts of National Income - Measurement of National Income- Circular flow of Income in Two, Three and Four Sector Economy.

Module - 3

Classical theory of Employment - Say's Law of Markets.

Module - 4

Keynesian Theory of Employment - Consumption function – Investment Function - Marginal Efficiency of Capital (MEC)- Concepts of multiplier and accelerator

Module - 5

Meaning and Functions of Money - Classification of money - Gresham's Law - RBI classificationofMoney.TheoriesofMoney-Fisher'sQuantitytheoryofMoney Camb ridge approach (Marshall, Pigou, Robertson &Keynes).

DEPARTMENT OF ECONOMICS

SYLLABUS 2018-2019

B. A. ECONOMICS
II Year B. A. Programme (UG) Courses – Under CBCS
Semester – IV
Paper – IV (Core Paper)

Banking and International Trade

Module - 1

Trade Cycles - meaning and definition - Phases of a Trade Cycle -Inflation - definition - types of inflation - causes and effects of inflation measures to control inflation.

Module - 2

Banking: Meaning and definition -Functions of Commercial Banks - Concept of Credit creation-Functions of RBI - Recent developments in banking sectors.

Module – 3

Non-Bank Financial Institutions – Types of NBFIs - Factors contributing to the Growth of NBFIs –-Money market – Defects of Indian money market

Module – 4

Concepts of Shares-Debentures - Stock Market - Functions - Primary and Secondary Markets - SEBI - - Insurance - Life Insurance and General Insurance.

Module - 5

Macro Economic Policy - Fiscal, Monetary and Exchange rate policies
Objectives and Significance - Importance of International Trade - Regional and International Trade – Defining Balance of Trade and Balance of Payment.

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DEPARTMENT OF POLITICAL SCIENCE

SYLLABUS 2018-2019

FIRST YEAR; SEMESTER – I
B.A. POLITICAL SCIENCE
PAPER-I: BASIC CONCEPTS OF POLITICAL SCIENCE

Unit-1: Explanatory Frameworks of Politics

1. What is Politics: Nature and Scope of Political Science
2. Approaches to the Study of Politics: Normative, Historical, Empirical Traditions

Unit-2: What is the State

1. Origin and Evolution of the Modern State
2. Different Conceptions on the role of the Modern State: Social Democratic and Neo Liberal conceptions

Unit-3: Nations and Nationalism

1. Conceptual Distinction between Nationality and Nation
2. Varieties of Nationalism: Culture and Civic Nationalism

Unit-4: Rights and Citizenship

1. Evolution of Rights: Civil and Social rights
2. Citizenship: Universal and Differential Citizenship

Unit-5: Freedom, Equality and Justice

1. Freedom: Negative and Positive Freedom
2. Equality: Formal Equality, Equality of Opportunity, Equality of Outcome
3. Justice: Justice based on Needs, Deserts and Rights

Reference books:

1. Bhargava Rajeev and Acharya Ashok (eds) (2008) Political Theory: An Introduction, Pearson, New Delhi.
2. Andrew Heywood (2007) Politics 3rd edition, Palgrave Macmillan, NewYork.
3. Bellamy R (1993) (Ed) Theories and Concepts of Politics, Manchester university press, New York.

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DEPARTMENT OF POLITICAL SCIENCE

SYLLABUS 2018-2019

FIRST YEAR; SEMESTER – II
B.A. POLITICAL SCIENCE
PAPER-II : POLITICAL INSTITUTIONS
(CONCEPTS, THEORIES AND INSTITUTIONS)

Unit-1: Constitutionalism

1. The Purpose of Constitutional law, Theory of Separation of Powers
2. Structural Forms of the Modern State: Basic features of Parliamentary and Presidential forms of Government

Unit-2: Territorial Division of Authority of the Modern State

1. Basic features of Federal form of Government
2. Basic features of Unitary form of Government

Unit-3: Institutional forms of the Modern State

1. Democracy: Basic features of Classical and Modern Representative Democracy
2. Models of Democracy: Procedural Democracy and Substantive Democracy

Unit-4: Judiciary and Democratic State

1. The nature, role and functions of the Judiciary
2. Judicial Review: Debates on the Supremacy of legislature or Judiciary in the protection of Constitutional law

Reference books:

1. Andrew Heywood (2007) Politics 3rd edition, Palgrave Macmillan, New York
2. Held, David (2006) Models of Democracy 3rd edition Oxford Polity Press
3. Birch A.H (2000) The Concepts and Theories of Democracy, London Routledge
4. Bogdanor, V (Ed) (1988) Constitutions in Democratic Politics Gower, Aldershot

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DEPARTMENT OF POLITICAL SCIENCE

SYLLABUS 2018-2019

SECOND YEAR; SEMESTER – III
B.A. POLITICAL SCIENCE
PAPER-III : INDIAN CONSTITUTION

Unit-1: The Making of the Constitution

1. The ideological legacy of the Indian National Movement on the Constituent Assembly
2. The Nature and Composition of the Constituent Assembly

Unit-2: Philosophical Premises of the Indian Constitution

1. Preamble: The underlying values of the Indian Constitution
2. Salient features of the Constitution of India

Unit-3: Fundamental rights and Directive principles of State Policy

1. Individual and Collective Rights: Limitations on the fundamental Rights
2. Judicial Interpretation of Fundamental Rights
3. The doctrine of 'Basic Structure' of the Constitution: KesavanandaBharathi Case

Unit-4: Indian Federalism

1. Unitary and Federal features in the Indian Constitution
2. Tension Areas between the Union and State Governments

   Legislative, Administrative and Financial Spheres

Unit-5: Working of the Indian Constitution

1. The Values of the Indian Constitution and Ushering of Social Revolution in India
2. The causes for the Ascendency of the Executive over legislature and Judiciary; Major Controversies regarding the Amendments to the Constitution
3. Nature and Role of Higher Judiciary in India; Recent Debates on the mode of appointment of Judges

4. The causes for the Ascendency of the Executive over legislature and Judiciary; Major Controversies regarding the Amendments to the Constitution
5. Nature and Role of Higher Judiciary in India; Recent Debates on the mode of appointment of Judges

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DEPARTMENT OF POLITICAL SCIENCE

SYLLABUS 2018-2019

SECOND YEAR; SEMESTER – IV
B.A. POLITICAL SCIENCE
PAPER-IV : INDIAN POLITICAL PROCESS

Unit-1: Approaches to Study the Political Processes in India

1. Theory of Modernization: Transition from Tradition to Modernity
2. Marxian Approach: Transition from pre-capitalism to capitalism

Unit-2: Social Structure and Democratic Process

1. Transition of Caste System: From Hierarchy to Identity: Role of Agency
2. Politicisation of Intermediate and Dalit Caste Communities
3. Evolution of Modernity in India

Unit-3: Religion and Politics

1. Competing Communalisms: Majoritarian and Minoritarian
2. Debates on Secularism; Role of the State towards religion

Unit-4: Party and Electoral Processes in India

1. Electoral Trends of the lokSabha from 1952 to 2014:From the One Party Congress System to Multi Party Coalitions
2. Determinants of Voting Behavior in India:Caste,Class,Patronage, Money etc.
3. Evolution of Party System in India: the Ideology and Social bases of major Political Parties: INC,BJP,CPM, DMK,BSP,TDP

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B.A TTM

SYLLABUS 2018-2019

DEPARTMENT OF TOURISM AND TRAVEL MANEGMENT

PAPER: -1 - BASICS OF TOURISM

SEMESTER – I

Unit: -1: - Tourism Definition - Nature and Scope - History of Tourism and its developments - Types of Tourism, domestic and International tourism- Causes of rapid growth of tourism.

Unit: -II: - Travel and travellers in Ancient India - growth and development of tourism in India- travel during medieval age- European trade links - tourism in independent India - Constitutional provision of Indian Tourism.

Unit: -III: Socio- Economic Significance of tourism, Tourism as an Industry ancillary industries in tourism- Tourism organizations, National and International- role of State and Central Governments in promotion and development of tourism.

Unit: -IV: Demand and supply in tourism - need for measuring tourism - general problems of measurement importance of tourist statistics - types of tourist-statistic-methods of measurement tourism demand.

Unit: -V: Structure of State and Central tourism department and tourism development corporation tourism promotion councils and etc., - district tourism promotion councils.

B.A TTM
SYLLABUS 2018-2019
DEPARTMENT OF TOURISM AND TRAVEL MANEGMENT
Paper-II: PRINCIPLES AND PRACTICES OF TOURISM

SEMESTER – II

Module 1

Tourism development and state intervention National economic goals-political legislation, equity and social needs, social investment, regulation and government controls, regional development in Tourism-

Module 2

Tourist motivation Factors types Push and Pull factors - Determinants of tourism-Theories of Motivation - psychological, cultural, economic, personal and social barriers to travel

Module 3

Impact of tourism Meaning, positive and negative Social, cultural, economic and environmental impacts of tourism - Employment and Revenue generation Tourist impactanalysis

Module 4

Components of Tourism- Types of transportation Railways, airways, waterways androadwaysRole of railways in promoting tourism in India Accommodation and food

Module 5

Tourism finance Introduction, meaning, nature, scope and functions of finance Application offinancial management in tourism industry Tourism Finance Corporation of India and other Organizations Aims, objectives and functions

References:

1. Pran Nath Seth (2006): Successful tourism Management, Sterling, New Delhi

(Vol. 1 & 2)

2. Mill and Morrison, (1992). The Tourism System: An Introductory Text, Prentice

Hall. London

3. Cooper. Fletcher et al. (1993). Tourism Principles and Practices. Pitman.

4. Bhatia, A.K. (2010): International Tourism Management, Sterling, New Delhi 5. Burkart and Medlik. (1981). Tourism: Past, Present and Future. Heinemann,

ELBS.

6. Christopher.J. Hollway: Longman (2012): The Business of Tourism. Pearson.

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SYLLABUS 2018-2019
DEPARTMENT OF TOURISM AND TRAVEL MANEGMENT

SemesterIIISyllabus

Paper – III TOURISMPRODUCT

Module-1

Definitions – concept, types and characteristics of tourism products, elements of tourismproducts – geographical elements and other tourist attractions –different levels ofmodelsandlayers–productlifecycle.

Module-2

Geography of tourism – definition. scope and content of geography of tourism – major landforms – mountains, plains ,plateaus; natural regions of the world – Impact of weather andclimateontourism,seasonalrhythm– geographicalcomponentsandtourismdevelopmentlinkages .

Module-3

Natural tourist resources – important national parks and wild life sanctuaries – examplesfromsouthINDIA.Beachesandislands, waterfalls: desertersdesertsafarisandfestivalsrecreation and adventure tourism (land,water,and air based)

Module-4

Concept of tourism pilgrimage in India – select Hindu, Buddhist, Jain,Sikh,Islam andchief pilgrimcentres andrelatedcircuits

Module-5

Performing arts and hand crafts of India –music and dance (tribal, folk, & classical) tourismfestivals –introduction to medical, health and wellness tourism – world heritage sites inIndia.

References: -

1. **Rangamukesh, tourism protentionalinIndia.**
2. **SarkarH,museumsandprotectionsofmonumentsandantiquities inIndia.**
3. **Vijayalakshmik.shistorytourism.**
4. **WilliamsS(1998)Tourismgeography, Routledge,London.WWW.Unwto.org.**
5. **http://www.buzzle.com**
6. **www.international.icomos.org**
7. **www.unesco.org**
8. **www.pondiuni.edu.in**
9. **www.globalpropertyguide.com**
10. **www.amazon.in**

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SYLLABUS 2018-2019
DEPARTMENTOFTOURISM&TRAVELMANAGEMENT
SemesterIV –Syllabus

PaperIV:-CULTURALTOURISMINANDHRA PRADESH

Module -1

Definition to History and culture (Tangible and Intangible) – Brief History of – SalientFeatures ofA.PCulture

Module - 2

Pre and Proto History – Art and Architecture of A.P as Tourism Products – MajorMuseumsandArtGalleries –MajorpilgrimCenters(Temple,ChurchandMosque) inA.P

Module -3

Performing Arts and Handicrafts – Andhra Paintings and Stone Crafts – Music and Dance(Tribal,FolkandClassical)

Module - 4

Language and Literature – Dress and Ornaments – Food (cuisine) and Health (MedicalSystems)

Module-5

Tribal Culture of A.P – Tribes of A.P – Geographical spread – Identity – Society –Economy – Religion and Culture – Need for Conservation of Cultural heritage – UNESCOInitiatives– FieldVisits.

References:

APTDCPublications

Sivanagi Reddy, E, - Andhra Pradeshlo Tourism Vanarulu – Avakasalu (Telugu),Hyderabad,2003
www.aptdc.gov.in
www.aptourism.gov.in
www.tavell.in/Andhra

DEPARTMENT OF COMMERCE

SYLLABUS 2018-2019

Semester - I

DSC 1A 1.1- Fundamentals of Accounting-I

Unit-I – Introduction to Accounting

Need for Accounting – Definition – Objectives, Advantages – Book keeping and Accounting– Accounting concepts and conventions - Accounting Cycle - Classification of Accounts and its rules - Double Entry Book-keeping - Journalization - Posting to Ledgers, Balancing of ledger Accounts (problems).

Unit –II: Subsidiary Books:

Types of Subsidiary Books - Cash Book, Three-column Cash Book- Petty cash Book (Problems).

Unit-III: Trail Balance and Rectification of Errors:

Preparation of Trail balance - Errors – Meaning – Types of Errors – Rectification of Errors (Problems)

Unit-IV- Bank Reconciliation Statement:

Need for bank reconciliation - Reasons for difference between Cash Book and Pass Book Balances- Preparation of Bank Reconciliation Statement- Problems on both favorable and unfavourable balances.

Unit -V: Final Accounts:

Preparation of Final Accounts: Trading account – Profit and Loss account – Balance Sheet – Final Accounts with adjustments (Problems).

Reference Books

1. T.S.Reddy & A. Murthy, Financial Accounting , Margham Publications
2. R L Gupta & V. K Gupta, Principles and Practice of Accounting, Sultan Chand & Sons
3. S.P. Jain & K.L Narang, Accountancy-I, Kalyani Publishers
4. Tulasian, Accountancy -I, Tata McGraw Hill Co.
5. V.K.Goyal, Financial Accounting, Excel Books
6. K. Arunjothi, Fundamentals of Accounting; Maruthi Publications

DSC 2 A 1.2- Business Organization

Unit-I – Introduction

Concepts of Business, Trade , Industry and Commerce – Features of Business -Trade Classification - Aids to Trade – Industry – Classification – Relationship of Trade, Industry and Commerce.

Unit II- Business Functions and Entrepreneurship

Functions of Business and their relationship - Factors influencing the choice of suitable form of organization – Meaning of Entrepreneurship – Characteristics of a good entrepreneur - Types – Functions of Entrepreneurship.

Unit –III – Forms of Business Organizations

Sole Proprietorship – Meaning – Characteristics – Advantages and Disadvantages – Partnership - Meaning – Characteristics- Kinds of partners – Advantages and Disadvantages – Partnership Deed – Hindu-undivided Family – Cooperative Societies.

Unit-IV- Joint Stock Company

Joint Stock Company – Meaning – Characteristics –Advantages – Kinds of Companies - Differences between Private Ltd and Public Ltd Companies.

Unit-V- Company Incorporation

Preparation of important Documents for incorporation of Company – Memorandum of Association – Articles of Association – Differences Between Memorandum of Association and Articles of Association - Prospectus and its contents.

Reference Books

1. C.D.Balaji and G. Prasad, Business Organization - Margham Publications, Chennai.
2. R.K.Sharma and Shashi K Gupta, Business Organization - Kalyani Publications.
3. C.B.Guptha, Industrial Organization and Management, Sultan Chand.
4. Y.K.Bushan, Business organization and Management, Sultan Chand.
5. Sherlekar, Business Organization and Management, Himalaya Publications.

DSC 3A 1.3 - Business Economics-I

Unit-I- Introduction

Meaning and Definitions of Business Economics - Nature and scope of Business Economics- Micro and Macro Economics and their differences.

Unit-II- Demand Analysis

Meaning and Definition of Demand - Determinants of Demand -- Demand function – Law of demand- Demand Curve - Exceptions to Law of Demand.

Unit –III- Elasticity of Demand

Meaning and Definition of Elasticity of Demand – Types of Elasticity of Demand – Measurements of Price elasticity of demand – Total outlay Method – Point Method – Arc Method.

Unit – IV- Cost and Revenue Analysis

Classification of Costs – Total - Average – Marginal and Cost function – Long-run – Short-run – Total Revenue - Average revenue – Marginal Revenue.

Unit-V- Break-Even Analysis

Type of Costs – Fixed Cost – Semi-variable Cost – Variable Cost– Cost behaviour - Breakeven Analysis - Its Uses and limitations.

Reference Books

1. S.Sankaran, Business Economics, Margham Publications, Chennai.
2. Business Economics - Kalyani Publications.
3. Business Economics – Himalaya Publishing House.
4. Aryasri and Murthy Business Economics , Tata McGraw Hill.
5. Business Economics, Maruthi Publications.

DEPARTMENT OF COMMERCE

SYLLABUS 2018-2019

Semester - II

DSC 1B 2.1– Fundamentals of Accounting-II

Unit-I: Depreciation

Meaning of Depreciation - Methods of Depreciation: Straight line – Written down Value – Sum of the Years' Digits - Annuity and Depletion (Problems).

Unit-II: Provisions and Reserves

Meaning – Provision vs. Reserve – Preparation of Bad debts Account – Provision for Bad and doubtful debts – Provision for Discount on Debtors – Provision for discount on creditors - Repairs and Renewals Reserve A/c (Problems).

Unit-III: Bills of Exchange

Meaning of Bill –Features of bill – Parties in the Bill – Discounting of Bill – Renewal of Bill – Entries in the books of Drawer and Drawee (Problems).

Unit-IV: Consignment Accounts

Consignment - Features - Proforma invoice - Account sales – Del-credre Commission - Accounting treatment in the books of consigner and consignee - Valuation of closing stock - Normal and Abnormal losses (Problems).

Unit-V: Joint Venture Accounts

Joint venture - Features - Differences between Joint-venture and consignment – Accounting procedure - Methods of keeping records (Problems).

Reference Books:

1. R.L. Gupta & V.K. Gupta, Principles and Practice of Accounting, Sultan Chand
2. T. S. Reddy and A. Murthy - Financial Accounting, Margham Publications.
3. S.P. Jain & K.L Narang, Accountancy-I, Kalyani Publishers.
4. Tulsan, Accountancy-I, Tata McGraw Hill Co.
5. V.K. Goyal, Financial Accounting, Excel Books
6. T.S. Grewal, Introduction to Accountancy, Sultan Chand & Co.
7. Haneef and Mukherjee, Accountancy-I, Tata McGraw Hill
8. Arulanandam, Advanced Accountancy, Himalaya Publishers
9. S.N.Maheshwari & V.L.Maheswari, Advanced Accountancy-I, Vikas Publishers.

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DSC 2 B 2.2: Business Environment

Unit – I: Overview of Business Environment

Business Environment – Meaning – Macro and Micro Dimensions of Business Environment – Economic – Political – Social – Technological – Legal – Ecological – Cultural – Demographic – Changing Scenario and implications – Indian Perspective – Global perspective.

Unit – II: Economic Growth

Meaning of Economic growth – Factors Influencing Development – Balanced Regional Development.

Unit – III - Development and Planning

Rostow's stages of economic development - Meaning – Types of plans – Main objects of planning in India – NITI Ayog and National Development Council – Five year plans.

Unit – IV : Economic Policies

Economic Reforms and New Economic Policy – New Industrial Policy – Competition Law – Fiscal Policy – Objectives and Limitations – Union budget – Structure and importance of Union budget – Monetary policy and RBI.

Unit – V -Social, Political and Legal Environment

Concept of Social Justice - Schemes - Political Stability - Leal Changes.

Suggested Readings:

1. Rosy Joshi and Sangam Kapoor : Business Environment.
2. Francis Cherunilam : Business Environment.
3. S.K. Mishra and V.K. Puri : Economic Environment of Business.
4. K. Aswathappa : Essentials of Business Environment.

DSC 3 B 2.3 - Business Economics-II

Unit-I: Production and Costs: Techniques of Maximization of output, Minimization of costs and Maximization of profit - Scale of production - Economies and Dis-economies of Scale - Costs of Production – Cobb-Douglas Production Function.

Unit-II: Market Structure-I: Concept of Market - Market structure - Characteristics - Perfect competition -characteristics equilibrium price - profit maximizing output in the short and long run Monopoly- characteristics - Profit maximizing out-put in the short and long run - Defects of Monopoly – Distinction between Perfect competition and Monopoly.

Unit-III Market Structure-II: Monopolistic Competition - Characteristics - Product differentiation - Profit maximization - Price and output in the short and long - run – Oligopoly - characteristics - Price rigidity - Kinked Demand Curve - Distribution - Concepts - Marginal Productivity - Theory of Distribution.

Unit-IV National Income And Economic Systems: National Income - Definition Measurement - GDP - Meaning Fiscal deficit - Economic systems - Socialism - Mixed Economic System - Free Market economy.

Unit-V Structural Reforms: Concepts of Economic liberalization, Privatization, Globalization - WTO Objectives Agreements - Functions - Trade cycles - Meaning - Phases - Benefits of International Trade - Balance of Trade and Balance of payments.

Reference Books:

1. Aryasri and Murthy, Business Economics, Tata McGraw Hill
2. H.L Ahuja, Business Economics, Sultan Chand & Sons
3. KPM Sundaram, Micro Economics
4. Mankiw, Principles of Economics, Cengage Publications
5. Mithani, Fundamentals of Business Economics, Himalaya Publishing House
6. DAR Subrahmanyam &V Hari Leela, A Text Book on Business Economics, Maruthi Publishers.
7. A.V. R. Chary, Business Economics, Kalyani Publishers, Hyderabad.

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Semester - III

DSC 1 C 3.1- Corporate Accounting

Unit - I :

Accounting for Share Capital - Issue, forfeiture and reissue of forfeited shares- concept & process of book building - **(Problems only)**

Unit - II :

Issue and Redemption of Debentures - Employee Stock Options – Accounting Treatment for Convertible and Non-Convertible debentures (preparation of Journal and Ledger). **(Problems only)**

Unit –III:

Valua tion of Good will and Shares : Need and methods - Normal Profit Method, Super Profits Method – Capitalization Method - Valuation of shares - Need for Valuation - Methods of Valuation - Net assets method, Yield basis method, Fair value method (including problems).

UNIT – IV:

Company Final Accounts: Preparation of Final Accounts – Adjustments relating to preparation of final accounts – Profit and loss account and balance sheet – Preparation of final accounts using computers (including problems).

Unit –V

Provisions of the Companies Act, 2013 relating to issues of shares and debentures - Preparation of Balance Sheet and Profit and Loss Account – Schedule-III. Issue of rights and bonus shares - Buyback of shares.**(Problems only)**

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III SEMESTER

DSC 2C 3.2- Business Statistics

Unit 1: Introduction to Statistics:

Definition, importance and limitations of statistics - Collection of data - Schedule and questionnaire – Frequency distribution – Tabulation -Diagrammatic and graphic presentation of data using Computers (Excel).

Unit 2: Measures of Central Tendency:

Characteristics of measures of Central Tendency-Types of Averages – Arithmetic Mean, Geometric Mean, Harmonic Mean, Median, Mode, Deciles, Percentiles, Properties of averages and their applications.

Unit 3: Measures of dispersion and Skewness:

Properties of dispersion-Range-Quartile Deviation –Mean Deviation-Standard Deviation-Coefficient of Variation-Skewness definition-Karl Pearson's and Bowley's Measures of skewness-Normal Distribution.

Unit 4: Measures of Relation:

Meaning and use of correlation – Types of correlation-Karlpearson's correlation coefficient – Spearman's Rank correlation-probable error-Calculation of Correlation by Using Computers.

Unit 5: Analysis of Time Series & Index Numbers:

Components of Time series- Measurement of trend – Index Numbers-Methods of Construction of Index Numbers – Price Index Numbers – Tests of Adequacy of Index Numbers – Cost of Index Numbers.

Suggested Readings:

1. Business Statistics — Reddy, C.R Deep Publications.
2. Statistics-Problems and Solutions — Kapoor V.K.
3. Fundamentals of Statistics — Elhance.D.N
4. Statistical Methods — Gupta S.P
5. Statistics — Gupta B.N.
6. Fundamentals of Statistics — Gupta S.C
7. Statistics-Theory, Methods and Applications — Sancheti,D.C. &Kapoor V.K
8. Business Statistics — J.K.Sharma

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III SEMESTER

DSC 3C 3.3 - Banking Theory & Practice

Unit-I: Introduction

Meaning & Definition of Bank – Functions of Commercial Banks – Kinds of Banks - Central Banking Vs. Commercial Banking.

Unit-II: Banking Systems

Unit Banking , Branch Banking, Investment Banking- Innovations in banking – E banking - Online and Offshore Banking , Internet Banking - Anywhere Banking - ATMs - RTGS.

Unit-III: Banking Development

Indigenous Banking - Cooperative Banks, Regional Rural banks, SIDBI, NABARD - EXIM Bank.

Unit-IV: Banker and Customer

Meaning and Definition of Banker and customer – Types of Customers - General Relationship and Special Relationship between Banker and Customer - KYC Norms.

Unit-V: Collecting Banker and Paying Banker

Concepts - Duties & Responsibilities of Collecting Banker – Holder for Value – Holder in Due Course – Statutory Protection to Collecting Banker - Responsibilities of Paying Banker - Payment Gateways.

Books for Reference

1. Banking Theory: Law & Practice : K P M Sundram and V L Varsheney
2. Banking Theory, Law and Practice : B. Santhanam; Margam Publications
3. Banking and Financial Systems : Aryasri
4. .Introduction to Banking : Vijaya Raghavan
5. Indian Financial System : M.Y.Khan
6. Indian Financial System : Murthy & Venugopal

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IV SEMESTER

Semester - IV

DSC 1D 4.1- Accounting for Service Organizations

Unit-I: Non-Trading/ Service Organizations
Non profit entities-Features of nonprofit entities-Accounting process-Preparation of summaries – Receipt and payment account – Meaning and special features – Procedure of preparation – Uses and Limitations.
Income and expenditure account – Features – Procedure for preparation – Preparation of Balance Sheet **(Problems only)**

Unit – II Single Entry or Accounts from Incomplete Records:
Single Entry - Features-Books and accounts maintained-Recording of transactions-Ascertainment of Profit.(Statement of Affairs method only). **(Problems only)**

Unit – III - Bank Accounts
Bank Accounts – Books and Registers to be maintained by Banks – Slip System of Posting – Rebate on bills discounted – Schedule of advances – Non forming assets –Banking Regulation Act, 1969 - Legal Provisions Relating to preparation of Final Accounts. **(Problems only)**

Unit-IV: Insurance Companies
Life Insurance Companies –Preparation of Revenue Account, Balance Sheet (including problems) – LIC Act, 1956.

Unit – V - Insurance Claims for Loss of Stocks only
Fire loss claims - Claims for loss of goods - Average clause - Steps calculation. **(Problems only)**

Suggested Readings

1. Corporate Accounting – RL Gupta & M. Radha Swami
2. Corporate Accounting – P.C. Tulsian
3. Company Accounts : Monga, Girish Ahuja and Shok Sehagal
4. Advanced Accountancy: Jain and Narang
5. Advanced Accountancy : R.K. Gupta and M. Radhaswamy
6. Advanced Accountancy : Chakraborty
7. Advanced Accountancy: S.P. Iyengar
8. Modern Accounting: A. Mukherjee, M. Hanife McGraw Hill Company Ltd., New Delhi.
9. Accounting standards and Corporate Accounting Practices: T.P. Ghosh Taxman
10. Corporate Accounting: S.N. Maheswari, S.R. Maheswari, Vikas Publishing.
11. Advanced Accountancy: Arutanandam, Raman, Himalaya Publishing House.
12. Advanced Accounts: M.C. Shukla, T.S. Grewal, S.C. Gupta, S. Chand.

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IV SEMESTER

DSC 2D 4.2- Business Laws

Unit-1 Contract

Meaning and Definition of Contract-Essential elements of valid Contract -Valid, Void and Voidable Contracts - Indian Contract Act, 1872.

Unit-2 Offer and Acceptance

Definition of Valid Offer, Acceptance and Consideration -Essential elements of a Valid Offer, Acceptance and Consideration.

Unit-3 Capacity of the Parties and Contingent Contract

Rules regarding to Minors contracts - Rules relating to contingent contracts - Different modes of discharge of contracts-Rules relating to remedies to breach of contract.

Unit-4 Sale of Goods Act 1930

Contract of sale – Sale and agreement to sell – Implied conditions and warranties – Rights of unpaid vendor.

Unit-5:

Cyber Law and Contract Procedures - Digital Signature - Safety Mechanisms.

Suggested Readings:

1. J. Jayasankar, Business Laws, Margham Publication. Chennai -17
2. Kapoor ND, Mercentile Law , Sultan Chand
3. Balachandram V, Business law Tata
4. Tulsian , Business Law Tata
5. Pillai Bhagavathi, Business Law , S.Chand.
6. Business Laws, Maruthi Publishers

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IV SEMESTER

DSC 3D 4.3- Income Tax

Unit-I

Introduction: Income Tax Law – Basic concepts: Income, Person, Assesse, Assessment year, Agricultural Income, Capital and revenue, Residential status, Income exempt from tax (theory only).

Unit-II

Income from salary: Allowances, perquisites, profits in lieu of salary, deductions from salary income, computation of salary income and qualified savings eligible for deduction u/s 80C (including problems).

Unit-III

Income from House Property: Annual value, let-out/self occupied/deemed to be let-out house, deductions from annual value - computation of income from house property (including problems).

Unit-IV

Income from Capital Gains – Income from other sources – (from Individual point of view) - chargeability – and assessment (including problems).

Unit-V:

Computation of total income of an individual – Deductions under section - 80 (including problems).

Reference Books:

1. Dr. Vinod; K. Singhania; Direct Taxes – Law and Practice, Taxman Publications
2. B.B. Lal; Direct Taxes; Konark Publications
3. Dr. Mehrotra and Dr. Goyal; Direct Taxes – Law and Practice; Sahitya Bhavan Publication.
4. Gaur and Narang; Income Tax, Kalyani Publishers, New Delhi.

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I SEMESTER

Semester - I
DSC 1A 1.1- Accounting-I

Unit-I – Introduction to Accounting
Need for Accounting – Definition – Objectives, Advantages – Book keeping and Accounting– Accounting concepts and conventions - Accounting Cycle - Classification of Accounts and its rules - Double Entry Book-keeping - Journalization - Posting to Ledgers, Balancing of ledger Accounts (problems).

Unit –II: Subsidiary Books:
Types of Subsidiary Books - Cash Book, Three-column Cash Book- Petty cash Book (Problems).

Unit-III: Trail Balance and Rectification of Errors:
Preparation of Trail balance - Errors – Meaning – Types of Errors – Rectification of Errors (Problems)

Unit-IV- Bank Reconciliation Statement:
Need for bank reconciliation - Reasons for difference between Cash Book and Pass Book Balances- Preparation of Bank Reconciliation Statement- Problems on both favorable and unfavourable balances.

Unit -V: Final Accounts:
Preparation of Final Accounts: Trading account – Profit and Loss account – Balance Sheet – Final Accounts with adjustments (Problems).

References:

1. T.S.Reddy & A. Murthy, Financial Accounting , Margham Publications
2. R L Gupta & V. K Gupta, Principles and Practice of Accounting, Sultan Chand & Sons
3. S.P. Jain & K.L Narang, Accountancy-I, Kalyani Publishers
4. Tulasian, Accountancy -I, Tata McGraw Hill Co.
5. V.K.Goyal, Financial Accounting, Excel Books
6. K. Arunjyothi, Fundamentals of Accounting; Maruthi Publications

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I SEMESTER

DSC 2 A 1.2 - Business Organization and Management

Unit-I: Introduction: Concepts of Business, Trade , Industry and Commerce – Features of Business -Trade Classification - Aids to Trade – Industry – Classification – Relationship among Trade, Industry and Commerce.

Unit-II: Forms of Business Organizations: Forms of Business Organization: Sole Proprietorship, Joint Hindu Family Firm, Partnership firm, Joint Stock Company, Cooperative Society; Choice of Form of Organization. Government - Business Interface; Public Sector Enterprises (PSEs) - Multinational Corporations (MNCs).

Unit-III: Joint Stock Company: Company Incorporation: Preparation of important Documents for incorporation of Company – Memorandum of Association – Articles of Association – Differences Between Memorandum of Association and Articles of Association - Prospectus and its contents - Companies Act, 2013.

Unit-IV: Management and Organization: Process of Management: Planning; Decision-making; Organizing: Line and Staff - Staffing - Directing and Controlling; Delegation and Decentralization of Authority.

Unit-V: Functional Areas of Management: Production - Manufacturing - Make in India - Marketing Management: Marketing Concept; Marketing Mix; Product Life Cycle; Pricing Policies and Practices. Financial Management: Objectives; Sources and Forms of Funds – Human Resource Management: Functions.

Suggested Readings:

1. Kaul, V.K., *Business Organization and Management*, Pearson Education, New Delhi.
2. Chhabra, T.N., *Business Organization and Management*, Sun India Publications, New Delhi.
3. Koontz and Weihrich, *Essentials of Management*, McGraw Hill Education.
4. Basu, C. R., *Business Organization and Management*, McGraw Hill Education.
5. Jim, Barry, John Chandler, Heather Clark; *Organization and Management*, Cengage Learning.
6. Allen, L.A., *Management and Organization*; McGraw Hill, New York.
7. R.K.Sharma and Shashi K Gupta, Business Organization - Kalyani Publications.
8. C.B.Guptha, Industrial Organization and Management, Sultan Chand.
9. Y.K.Bushan, Business organization and Management, Sultan Chand.
10. Sherlekar, Business Organization and Management, Himalaya Publications.

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I SEMESTER

DSC 3 A- Computer Fundamentals & Photoshop

Unit-I

Introduction to Computers: Characteristics and limitations of Computer, Block diagram of computer, types of computers, uses of computers, computer generations. Number systems: binary, hexa and octal numbering system- Windows basics: desktop, start menu, icons – Recent Developments – Cloud Server.

Unit-II

Input and Output Devices: Keyboard and mouse, input data in other ways, Types of Software: system software, Application software, commercial, open source, domain and free ware software, Memories: primary, secondary and cache memory.

Unit –III

Introduction to Adobe Photoshop: Getting started with Photoshop, creating and saving a document in Photoshop, page layout and back ground, Photoshop program window-title bar, menu bar, option bar, image window, image title bar, status bar, ruler, pallets, tool box, screen modes, saving files, reverting files, closing files.

Unit –IV

Images: working with images, image size and resolution, image editing, color modes and adjustments, Zooming & Panning an Image, Rulers, Guides & Grids- Working with Tool box: Practice Sessions.

Unit-V

Layers: Working with layers- layer styles- opacity-adjustment layers. **Filters:** The filter menu, Working with filters- Editing your photo shoot, presentation –how to create ads, artistic filter, blur filter, brush store filter, distort filters, noise filters, pixel ate filters, light effects, difference clouds, sharpen filters, printing.

Reference Books:

1.ReemaThareja, Fundamentals of Computers, Oxford University Press

2. Adobe Creative Team, Adobe Photoshop Class Room in a Book.

3.David Maxwell, Photoshop: Beginner's Guide for Photoshop - Digital Photography, Photo Editing, Color Grading & Graphic...19 February 2016.

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I SEMESTER

DSC - 1E 5.1 Cost Accounting

Unit-I:Introduction: Distinguish between Financial Accounting, Cost Accounting and management accounting - Cost Concepts and Classification – Cost Centre and Cost Unit – Preparation of Cost Sheet.

Unit-II: Elements of Cost: Materials: Material control – Selective control, ABC technique – Methods of pricing issues – FIFO, LIFO, Weighted average, (problems only).

Unit-III: Labour: Labour: Control of labor costs – Methods of remuneration – labour incentives schemes – Time rate halsey plan, Rowan plan,-Piece rate- F.W Taylor and Merrick multiple piece rate method (problems only)

Unit-IV: Methods of Costing: Job costing and contract costing – (problems only).

Unit -V: Marginal costing : Marginal Costing – BEP, P/V ratio, Margin of safety (problems only)

References:

1. S.P. Jain and K.L. Narang – Advanced Cost Accounting, Kalyani Publishers, Ludhiana.
2. M.N. Aurora – A test book of Cost Accounting, Vikas Publishing House Pvt. Ltd.
3. S.P. Iyengar – Cost Accounting, Sultan Chand & Sons.
4. Nigam & Sharma – Cost Accounting Principles and Applications, S.Chand & Sons.
5. S.N .Maheswari – Principles of Management Accounting.
6. I.M .Pandey – Management Accounting, Vikas Publishing House Pvt. Ltd.
7. Sharma & Shashi Gupta – Management Accounting, Kalyani Publishers. Ludhiana.

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II SEMESTER

Semester - II

DSC 1B 2.1 – Accounting-II

Unit-I: Depreciation
Meaning of Depreciation - Methods of Depreciation: Straight line – Written down Value – Sum of the Years' Digits - Annuity and Depletion (Problems).

Unit-II: Provisions and Reserves
Meaning – Provision vs. Reserve – Preparation of Bad debts Account – Provision for Bad and doubtful debts – Provision for Discount on Debtors – Provision for discount on creditors - Repairs and Renewals Reserve A/c (Problems).

Unit-III: Bills of Exchange
Meaning of Bill –Features of bill – Parties in the Bill – Discounting of Bill – Renewal of Bill – Entries in the books of Drawer and Drawee (Problems).

Unit-IV: Consignment Accounts
Consignment - Features - Proforma invoice - Account sales – Del-credre Commission - Accounting treatment in the books of consigner and consignee - Valuation of closing stock - Normal and Abnormal losses (Problems).

Unit-V: Joint Venture Accounts
Joint venture - Features - Differences between Joint-venture and consignment – Accounting procedure - Methods of keeping records (Problems).

Reference Books:

1. R.L. Gupta & V.K. Gupta, Principles and Practice of Accounting, S.Chand & Co.
2. T. S. Reddy and A. Murthy, Financial Accounting, Margham Publications.
3. S.P. Jain & K.L Narang, Accountancy-I, Kalyani Publishers.
4. Tulsan, Accountancy-I, Tata McGraw Hill Co.
5. V.K. Goyal, Financial Accounting, Excel Books
6. T.S. Grewal, Introduction to Accountancy, Sultan Chand & Co.
7. Haneef and Mukherjee, Accountancy-I, Tata McGraw Hill
8. Arulanandam, Advanced Accountancy, Himalaya Publishers
9. S.N.Maheshwari & V.L.Maheswari, Advanced Accountancy-I, Vikas Publishers.

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II SEMESTER

DSC 2 B 2.2 - Business Economics

Unit-I- Introduction: Meaning and Definitions of Business Economics - Nature and scope of Business Economics- Micro and Macro Economics and their Interface.

Unit-II- Demand Analysis: Definition - Determinants of Demand -- Demand function – Law of demand- Demand Curve - Exceptions to Law of Demand - Elasticity of Demand – Types of Elasticity of Demand – Measurements of Price elasticity of Demand – Total outlay Method – Point Method – Arc Method.

Unit – III: Cost and Revenue Analysis
Classification of Costs – Total - Average – Marginal; Cost function – Long-run – Short-run – Total Revenue - Average revenue – Marginal Revenue - Production and Costs: Techniques of Maximization of output, Minimization of costs and Maximization of profit - Scale of production - Economies and Dis-economies of Scale - Cobb-Douglas Production Function.

Unit-IV: Market Structure: Concept of Market - Market structure - Perfect competition - characteristics - equilibrium price - Monopoly- characteristics - Defects of Monopoly – Distinction between Perfect competition and Monopoly - Monopolistic Competition - Characteristics - Product differentiation - Oligopoly - characteristics - Price rigidity - Kinked Demand Curve.

Unit-V: National Income And Economic Systems: National Income - Measurement - GDP - Growth Rates - Problems in Assessment - Economic Systems - Socialism - Mixed Economic System - Free Market Economy - Economic liberalization, Privatization, Globalization - Free Trade - Agreements - Trade cycles - Phases - International Trade - Balance of payments.

References:

1. S.Sankaran, Business Economics, Margham Publications, Chennai.
2. Business Economics - Kalyani Publications.
3. Business Economics – Himalaya Publishing House.
4. Aryasri and Murthy Business Economics , Tata McGraw Hill.
5. Aryasri and Murthy, Business Economics, Tata McGraw Hill
6. H.L Ahuja, Business Economics, Sultan Chand & Sons
7. Mankiw, Principles of Economics, Cengage Publications
8. Mithani, Fundamentals of Business Economics, Himalaya Publishing House
9. A.V. R. Chary, Business Economics, Kalyani Publishers, Hyderabad.

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II SEMESTER

Office Automation Tools

Unit-I

MS-Excel: features of Ms-Excel, Parts of MS-Excel window, entering and editing data in worksheet, number formatting in excel, different cell references, how to enter and edit formula in excel, auto fill and custom fill, printing options.

Unit-II

Formatting options: Different formatting options, change row height, formulae and functions. **Functions:** Meaning and advantages of functions, different types of functions available in Excel.

Unit-III

Charts: Different types of charts, Parts of chart, chart creation using wizard, chart operations, data maps, graphs, data sorting, filtering. Excel sub totals, scenarios, what-if analysis, **Macro:** Meaning and advantages of Macros, creation, editing and deletion of macros - Creating a macro, how to run, how to delete a macro.

Unit-IV

MS Access: Creating a Simple Database and Tables: Features of Ms-Access, Creating a Database, Parts of Access. **Tables:** table creation using design view, table wizard, data sheet view, import table, link table. **Forms:** The Form Wizard, design view, columnar, tabular, data sheet, chart wizard.

Unit –V

Finding, Sorting and Displaying Data: Queries and Dynasts, Creating and using select queries, Returning to the Query Design, Multi-level sorts, Finding incomplete matches, showing All records after a Query, saving queries - Crosstab Queries. **Printing Reports:** Form and Database Printing. **Relational Databases:** Flat Versus Relational, Types of Relationships, Viewing Relationships, Defining and Redefining Relationships, Creating and Deleting Relationships.

Reference Books:

1. Ron Mansfield, Working in Microsoft Office, Tata McGraw Hill(2008)

2. EdBott, Woody Leonhard, Using Microsoft Office 2007, Pearson Education(2007)

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III SEMESTER

Semester - III

DSC 1 C 3.1 - Corporate Accounting

Unit-I

Accounting for Share Capital - Issue, forfeiture and reissue of forfeited shares- concept & process of book building. **(Problems only)**

Unit-II

Issue and Redemption of Debentures - Employee Stock Options – Accounting Treatment for Convertible and Non-Convertible debentures (preparation of Journal and Ledger). **(Problems only)**

Unit –III

Valuation of Goodwill and Shares: Need and methods - Normal Profit Method, Super Profits Method – Capitalization Method - Valuation of shares - Need for Valuation - Methods of Valuation - Net assets method, Yield basis method, Fair value method (including problems).

UNIT – IV

Company Final Accounts: Preparation of Final Accounts – Adjustments relating to preparation of final accounts – Profit and loss account and balance sheet – Preparation of final accounts using computers (including problems).

Unit –V

Provisions of the Companies Act, 2013 relating to issues of shares and debentures - Preparation of Balance Sheet and Profit and Loss Account – Schedule-III. Issue of rights and bonus shares - Buyback of shares (preparation of Journal and Ledger). **(Problems only)**

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III SEMESTER

DSC 2C 3.2- Business Statistics

Unit 1: Introduction to Statistics:

Definition, importance and limitations of statistics - Collection of data - Schedule and questionnaire – Frequency distribution – Tabulation -Diagrammatic and graphic presentation of data using Computers (Excel).

Unit 2: Measures of Central Tendency:

Characteristics of measures of Central Tendency-Types of Averages – Arithmetic Mean, Geometric Mean, Harmonic Mean, Median, Mode, Deciles, Percentiles, (Problems only)

Unit 3: Measures of dispersion and Skewness:

Properties of dispersion-Range-Quartile Deviation –Mean Deviation-Standard Deviation-Coefficient of Variation-Skewness definition-Karl Pearson's and Bowley's Measures of skewness-Normal Distribution.

Unit 4: Measures of Relation:

Meaning and use of correlation – Types of correlation-Karlpearson's correlation coefficient – Spearman's Rank correlation-probable error- Calculation of Correlation by Using Computers

Unit 5: Index Numbers:

Index Numbers-Methods of Construction of Index Numbers – Price Index Numbers – Tests of Adequacy of Index Numbers – Cost of Index Numbers. **(Problems only)**

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DEPARTMENT OF COMMERCE

B.COM COMPUTER

SYLLABUS 2018-2019

III SEMESTER

Programming IN C

Unit- I

Introduction to Algorithms and Programming Languages: Algorithm – Key features of Algorithms – Some more Algorithms – Flow Charts. **Introduction to C:** Structure of C Program –Writing the first C Program – File used in C Program – Compiling and Executing C Programs –Using Comments – Keywords – Identifiers – Basic Data Types in C – Variables – Constants – I/O Statements in C- Operators in C- Programming Examples – Type Conversion and Type Casting.

Unit-II

Decision Control and Looping Statements: Introduction to Decision Control Statements – Conditional Branching Statements – Iterative Statements – Nested Loops – Break and Continue Statement – Go to Statement.

Unit- III

Arrays: Introduction – Declaration of Arrays – Accessing elements of the Array – Storing Values in Array – Calculating the length of the Array – Operations on Array – one dimensional array for inter-function communication – Two dimensional Arrays –Operations on Two Dimensional Arrays, **Strings:** Introduction String and Character functions.

Unit- IV

Functions: Introduction – using functions – Function declaration/ prototype – Function definition – function call – return statement – Passing parameters – Scope of variables – Storage Classes – Recursive function.

Unit-V

Pointers: Understanding Computer Memory – Introduction to Pointers – declaring Pointer Variables – Passing Arguments to Functions using Pointer – Pointer and Arrays – Passing Array to Function. **Structure, Union, and Enumerated Data Types:** Introduction – Nested Structures – Arrays of Structures – Structures and Functions - Unions – Enumerated Data Types.

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DEPARTMENT OF COMMERCE

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SYLLABUS 2018-2019

IV SEMESTER

Semester - IV

DSC 1D 4.1- Accounting for Service Organizations

Unit-I: Non-Trading/ Service Organizations

Non profit entities-Features of nonprofit entities-Accounting process-Preparation of summaries – Receipt and payment account – Meaning and special features – Procedure of preparation – Uses and Limitations.

Income and expenditure account – Features – Procedure for preparation – Preparation of Balance Sheet **(Problems only)**

Unit – II Single Entry or Accounts from Incomplete Records:

Single Entry - Features-Books and accounts maintained-Recording of transactions-Ascertainment of Profit.(Statement of Affairs method only). **(Problems only)**

Unit – III - Bank Accounts

Bank Accounts – Books and Registers to be maintained by Banks – Slip System of Posting – Rebate on bills discounted – Schedule of advances – Non forming assets –Banking Regulation Act, 1969 - Legal Provisions Relating to preparation of Final Accounts. **(Problems only)**

Unit-IV: Insurance Companies

Life Insurance Companies –Preparation of Revenue Account, Balance Sheet (including problems) – LIC Act, 1956.

Unit – V - Insurance Claims for Loss of Stocks only

Fire loss claims - Claims for loss of goods - Average clause - Steps calculation. **(Problems only)**

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DEPARTMENT OF COMPUTER APPLICATION

SYLLABUS 2018-2019

I SEMESTER

B.A.,/ B.Sc., COMPUTER APPLICATIONS

SYLLABUS

I YEAR I SEMESTER

Paper I: Fundamentals of Computers

Unit-I: Introduction to computer

What is Computer, Characteristics of Computers, Generations of Computers, Classification of Computers, Basic Computer Organization, and Applications of Computers.

Unit-II: Memory, Processor and I/O devices

Introduction, Memory Hierarchy, Processor Registers, Cache memory, Primary Memory, Secondary Storage Devices,

Input and Output Devices: Magnetic tapes, Floppy Disks, Hard Disks, Optical Disks, USB Flash Devices, Memory Cards, Mass Storage Devices.

UNIT-III: Computer Software

Introduction to Computer Software, Classification of Computer Software, System Software, Application Software, Firmware, Middleware, Acquiring Computer Software, Design and Implementations of Correct, Efficient and Maintainable Programs

UNIT-IV: Introduction to Operating System

Operating Systems: Introduction, Evolution of Operating Systems, Process Management, Memory Management, File Management, Device Management, Security Management, Command Interpreter, Popular Operating Systems

UNIT-V: Introduction to Algorithms and Programming Languages

Algorithm, Control Structures used in Algorithms, Some more Algorithms, Flowcharts, Pseudo code, Programming Languages, Categorization of High-Level Languages, Some Popular High-Level Languages, Factors affecting selection of Programming Language.

TEXT BOOKS:

1. Fundamentals of Computers By Reema Thareja from Oxford University Press

Reference Books:

1. Peter Norton, Introduction to Computers, 6th Edition Tata McGraw Hill, 2008
2. Jacob Beckerman, How to build a Computer 2014-15 Learn, Select parts, Assemble, and Install: A step by step Guide to Your First Home Built.
3. Leon A and Leon M, Computers for Everyone, Leon Vikas, 2001.
4. Turban E, Rainer R K, and Potter RE, Introduction to Information Technology, Jhon Wiley & Sons, 2000.

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DEPARTMENT OF COMPUTER APPLICATION

SYLLABUS 2018-2019

II SEMESTER

I YEAR II SEMESTER

PAPER- II :OFFICE AUTOMATION TOOL

UNIT I

Office Automation: Introduction to automation, Need of automation, Word Processing, Basics of MS-Word, Text editing, Text formatting, working with header and footer, working with tables. **Graphics**: Importing graphics, Clipart, Insert picture, Clip Art Gallery, using word's drawing features, drawing objects, text in drawing. **Templates**: Template types, using templates, exploring templates, modifying templates. **Macros**: Macro, Recording macros, editing macros, running a macro. **Mail Merge**: Mail Merge concept, Main document, data sources, merging data source and main document. Overview of word menu options word basic tool bar.

UNIT II

MS Power Point: Introduction, Building a presentation, Outlining the presentation, Creating the text and chart slides, Formatting charts, customizing a presentation, drawing on slides, Creating slide shows

Creating Presentations : Using auto content wizard, Using blank presentation option, Using design template option, Adding slides, Deleting a slide, Importing Images from the outside world, Drawing in power point, Transition and build effects, Deleting a slide, Numbering a slide, Saving presentation, Closing presentation, Printing presentation elements.

UNIT III

Excel Basics: Overview of Excel features, Getting started, Creating a new worksheet, Selecting cells, Entering and editing text, Entering and editing Numbers, entering and editing Formulas, Referencing cells, moving cells, copying cells, sorting cell data, inserting rows, inserting columns, Inserting cells, Deleting parts of a worksheet, clearing parts of a worksheet.

Formatting: Page setup, changing column widths and Row heights, auto format, changing font sizes and Attributes, centering text across columns, using border buttons and Commands, changing colors and shading, hiding rows and columns.

UNIT IV

Introduction to functions: Parts of a functions, Functions Requiring Add-ins, The Function Wizard. Examples functions by category: Data and time functions, Engineering functions, Math and Trig functions, Statistical functions, Text functions.

Excel Charts: Chart parts and terminology, Instant charts with the chard wizard, creation of different types of charts, printing charts, deleting charts – Linking in Excel

Excel Graphics: Creating and placing graphic objects, Resizing Graphics, Drawing Lines and Shapes

UNIT V

MS Access

Creating a Simple Database and Tables: Creating a contact Databases with the wiz, The Access Table Wizard, Creating Database Tables without the wizard, Field Names, Data Types and Properties, Adding, deleting fields, renaming the fields in a table. **Forms**: The Form Wizard, Saving Forms, Modifying Forms

Entering and Editing Data: Adding Records, Duplicating previous entries without Retyping, Undo, Correcting Entries, Global Replacements, Moving from Record to Record in a table.

Finding, Sorting and Displaying Data: Queries and Dynasets, Creating and using select queries, Returning to the Query Design, Multilevel Sorts, Finding incomplete matches, Showing All Records after a Query, Saving Queries, Crosstab Queries, Report Generation.

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DEPARTMENT OF COMPUTER APPLICATION

SYLLABUS 2018-2019

III SEMESTER

II YEAR III SEMESTER

PAPER- III : NETWORKS AND INTERNET FOUNDATION

UNIT I

Introduction to Network, advantages and disadvantages of network , Types of Networks – Network topologies, Types of topologies- Connecting Devices – Hubs, Repeaters, Bridges, Routers, Network Interface Cards (NIC) and Switches -– Network Operating system - analog and digital signal, analog and digital signal transmission.

UNIT II

Introduction to Network Communication Model- Network Architecture –Application Layer, Presentation Layer, Session Layer, transport Layer, Network Layer, Data-link Layer, Physical Layer.

UNIT III

Introduction to Protocols, TCP/IP Protocol- Protocols and their classification –Address Resolution Protocol(ARP) , Reverse Address Resolution Protocols (RARP) , SMTP, MIME, IMAP, POP, ICMP, HTTP.

UNIT IV

Overview of Internet, revolution of Internet , Internet service providers (ISP) –setting windows environment for dial up networking, search engine, searching web using search engines – audio on internet – newsgroup – subscribing to news groups.

UNIT V

Intranet concepts and architecture, building corporate world wide web protocol, Internet infrastructure, Internet Security design - intranet as business tools, future of intranet.

Bluetooth and other wireless networks.- configuring wireless networks- Security – virus and antivirus, configuring firewalls.

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DEPARTMENT OF COMPUTER APPLICATION

SYLLABUS 2018-2019

IV SEMESTER

II YEAR IV SEMESTER

Paper – IV: Programming IN C

Unit- I: Introduction to Algorithms and Programming Languages: Algorithm – Key features of Algorithms – Some more Algorithms – Flow Charts. **Introduction to C:** Structure of C Program –Writing the first C Program – File used in C Program – Compiling and Executing C Programs –Using Comments – Keywords – Identifiers – Basic Data Types in C – Variables – Constants – I/O Statements in C- Operators in C- Programming Examples – Type Conversion and Type Casting.

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DEPARTMENT OF BIOCHEMISTRY

SYLLABUS 2018-2019

I SEMESTER

B.Sc - BIOCHEMISTRY (CBCS) SYLLABUS

SEMESTER- I

Paper I : Biomolecules

Unit – I : Biophysical Concepts 12 hours

Water as a biological solvent and its role in biological processes. Biological relevance of pH, measurement of pH, pKa of functional groups in biopolymers such as proteins and nucleic acids. Importance of buffers in biological systems, ion selective electrodes, and oxygen electrode. Donnan membrane equilibrium. Significance of osmotic pressure in biological systems.

Unit – II : Carbohydrates 12 hours

Carbohydrates: Classification, monosaccharides, D and L designation, open chain and cyclic structures, epimers and anomers,mutarotation, reactions of carbohydrates (due to functional groups - hydroxyl , aldehyde and ketone). Amino sugars, Glycosides. Structure and biological importance of disaccharides (sucrose, lactose, maltose, isomaltose, trehalose), trisaccharides (raffinose, melezitose), structural polysaccharides (cellulose, chitin, pectin) and storage polysaccharides (starch, inulin, glycogen). Glycosaminoglycans, Bacterial cell wall polysaccharides. Outlines of glycoproteins, glycolipids and blood group substances.

Unit – III Lipids 12 hours

Lipids: Classification, saturated and unsaturated fatty acids, structure and properties of fats and oils (acid, saponificition and iodine values, rancidity). General properties and structures of phospholipids, sphingolipids and cholesterol. Prostaglandins- structure and biological role of PGD2,PGE2 and PGF2 α. Lipoproteins: Types and functions Biomembranes: Behavior of amphipathic lipids in water- formation of micelles, bilayers, vesicles, liposomes. Membrane composition and organization – Fluid mosaic model.

Unit-IV : Amino Acids and Peptides 12 hours

Amino Acids: Classification, structure, stereochemistry, chemical reactions of amino acids due to carbonyl and amino groups. Titration curve of glycine and p*K* values. Essential and non- essential amino acids, non-protein amino acids. Peptide bond - nature and conformation. Naturally occurring peptides – glutathione, enkephalin.

Unit-V : Proteins 12 hours

Proteins: Classification based on solubility, shape and function. Determination of amino acid
composition of proteins. General properties of proteins, denaturation and renaturation of proteins. Structural organization of proteins- primary, secondary, tertiary and quaternary

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DEPARTMENT OF BIOCHEMISTRY

SYLLABUS 2018-2019

II SEMESTER

Semester-II

Paper-II Nucleic acids and Biochemical Techniques

Unit-I : Nucleic Acids 12 hours

Nature of nucleic acids. Structure of purines and pyrimidines, nucleosides, nucleotides. Stability and formation of phosphodiester linkages. Effect of acids, alkali and nucleases on DNA and RNA. Structure of Nucleic acids- Watson-Crick DNA double helix structure, introduction to circular DNA, super coiling, helix to random coil transition, denaturation of nucleic acids hyper chromic effect, *T*m-values and their significance. Reassociation kinetics, cot curves and their significance. Types of RNA and DNA.

Unit-II: Porphyrins 9 hours

Structure of porphyrins; Protoporphyrin, porphobilinogen properties Identification of Porphyrins. Structure of metalloporphyrins – Heme, cytochromes and chlorophylls.

Unit-III: Biochemical Techniques I 15 hours

Methods of tissue homogenization: (Potter-Elvejham, mechnical blender, sonicator and enzymatic). Principle and applications of centrifugation techniques- differential, density gradient. Ultracentrifugation-preparative and analytical. Principle and applications of chromatographic techniques- paper, thin layer, gel filtration, ionexchange and affinity chromatography. Elementary treatment of an enzyme purification. Electrophoresis- principles and applications of paper, polyacrylamide (native and SDS) and agarose gel electrophoresis.

Unit-IV: Biochemical Techniques II 12 hours

Colorimetry and Spectrophotometry- Laws of light absorption- Beer-Lambert law. UV and visible absorption spectra, molar extinction coefficient, biochemical applications of spectrophotometer. Principle of fluorimetry. Tracer techniques: Radio isotopes, units of radio activity, half life, β and γ- emitters, use of radioactive isotopes in biology.

Unit- V : Techniques employed in metabolic studies 12 hours

Broad outlines of Intermediary metabolism, methods of investigation, Intermediary metabolism in vivo studies such as analysis of excretion, Respiratory exchange, Removal of organs and perfusion studies, in vitro studies such as tissue slice techniques; Homogenates and purified enzyme systems; isotope tracer studies, use of inhibitors and antimetabolites.

Practical - 2 : Nucleic acids and Biochemical Techniques 45 hrs

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DEPARTMENT OF BIOCHEMISTRY

SYLLABUS 2018-2019

III SEMESTER

Semester III
Paper-III : Enzymology and Bioenergetics

Unit-I: Classification of Enzymes and Structure 12 hours

Introduction to biocatalysis, differences between chemical and biological catalysis. Nomenclature and classification of enzymes. Enzyme specificity. Active site. Principles of energy of activation, transition state. Interaction between enzyme and substrate- lock and key, induced fit models. Definition of holo-enzyme, apo-enzyme, coenzyme, cofactor. Fundamentals of enzyme assay, enzyme units.

Unit II: Influence of Physical factors and Inhibitors on Enzyme activity. 12 hours

Factors affecting the catalysis- substrate concentration, *p*H, temperature. Michaelis – Menten equation for uni-substrate reaction (derivation not necessary), significance of *K*M and Vmax. Enzyme inhibition- irreversible and reversible, types of reversible inhibitions- competitive and non-competitive.

Unit-III: Mechanism of enzyme action 12 hours

Outline of mechanism of enzyme action- acid-base catalysis, covalent catalysis, electrostatic catalysis, and metal ion catalysis. Regulation of enzyme activity- allosterism and cooperatitvity, ATCase as an allosteric enzyme, covalent modulation- covalent phosphorylation of phosphorylase, zymogen activation- activation of trypsinogen and chymotrypsinogen. Isoenzymes (LDH). Multienzyme complxes (PDH). Ribozyme.

Unit- IV: Bioenergetics 12 hours

Bioenergetics: Thermodynamic principles – Chemical equilibria; free energy, enthalpy (H), entropy (S). Free energy change in biological transformations in living systems; High energy compounds. Energy, change, oxidation-reduction reactions.

Unit V : Biological Oxidations in Mitochondria 12 hours

Organization of electron carriers and enzymes in mitochondria. Classes of electron-transferring enzymes, inhibiters of electron transport. Oxidative phosphorylation. Uncouplers and inhibitors of oxidative phosphorylation. Mechanism of oxidative phosphorylation.

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DEPARTMENT OF BIOCHEMISTRY

SYLLABUS 2018-2019

IV SEMESTER

Semester - IV
Paper-IV : Intermediary Metabolism

Unit- I : Carbohydrate Metabolism 12 hours

Concept of anabolism and catabolism. Glycolytic pathway, energy yield. Fate of pyruvateformation of lactate and ethanol, Pasteur effect. Citric acid cycle, regulation, energy yield, amphipathic role. Anaplerotic reactions. Glycogenolysis and glycogenesis. Pentose phosphate pathway. Gluconeogenesis. Photosytnthesis- Light and Dark reactions, Calvin cycle, C4 Pathway. Disorders of carbohydrate metabolism- Diabetes Mellitus.

Unit- II : Lipid Metabolism 12 hours

Catabolism of fatty acids (β- oxidation) with even and odd number of carbon atoms, Ketogenesis, *de novo* synthesis of fatty acids, elongation of fatty acids in mitochondria and microsomes, Biosynthesis and degradation of triacylglycerol and lecithin. Biosynthesis of cholesterol. Disorders of lipid metabolism.

Unit- III: Metabolism of Amino acids 12 hours

General reactions of amino acid metabolism- transamination, decarboxylation and deamination, Urea cycle and regulation, Catabolism of carbon skeleton of amino acids- glycogenic and ketogenic amino acids. Metabolism of glycine, serine, aspartic acid, methionine, phenylalanine and leucine. Biosynthesis of creatine. Inborn errors of aromatic and branched chain amino acid metabolism.

Unit- IV: Nitrogen Fixation 12 hours

Nitrogen cycle, Non-biological and biological nitrogen fixation, Nitrogenase system. Utilization of nitrate ion, Ammonia incorporation into organic compounds. Synthesis of glutamine and regulatory mechanism of glutamine synthase.

Unit- V: Metabolism of Nucleic acid and heme: 12 hours

Biosynthesis and regulation of purine and pyrimidine nucleotides, *de novo* and salvage pathways. Catabolism of purines and pyrimidines. Biosynthesis of deoxyribo nucleotides ribonucleotide reductase and thymidylate synthase and their significance. Disorders of nucleotide metabolism- Gout, Lesch- Nyhan syndrome.Biosynthesis and degradation of heme.

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DEPARTMENT OF BIOTECHNOLOGY

SYLLABUS 2018-2019

I SEMESTER

B.Sc., SEMESTER I

PAPER-I : MICROBIOLOGY AND CELL BIOLOGY

UNIT I

History, Development and Microscopy

History and development of microbiology: contributions of Louis Pasteur, Robert Koch and Edward Jenner. Microscopy: Compound microscopy: Numerical aperture and its importance, resolving power, oil immersion objectives and their significance, principles and applications of dark field, phase contrast, fluorescent microscopy. Electron microscopy: Principle, ray diagram and applications, TEM and SEM, comparison between optical and electron microscope, limitations of electron microscopy. Stains and staining procedures: Acidic, basic and neutral stains, Gram staining, Acid fast staining, Flagella staining, Endospore staining.

UNIT II

Bacteria: Bacterial morphology and subcellular structures, general morphology of bacteria, shapes and sizes, generalized diagram of typical bacterial cell. Slime layer and capsule, difference between the structure, function and the position of the two structures. Cell wall of gram +ve and Gram -ve cells. General account of flagella and fimbriae.Chromatin material, plasmids; definition and kind of plasmids (conjugative and non-conjugative) F, R, and Col plasmids.Endospores: Detailed study of endospore structure and its formation, germination, basis of resistance.

Viruses: General characteristics of viruses, difference between virus and typical microbial cell, structure, different shapes and symmetries with one example of each type, classification of viruses on the basis of nucleic acids, phage and animal cell viruses, example of each and their importance. Brief idea of lytic cycle and lysogeny.

UNIT III

Microbial Nutrition: Basic nutritional requirements: Basic idea of such nutrients as water, carbon, nitrogen, sulfur and vitamins etc., natural and synthetic media, nutritional classification of bacteria. Selective and Differential media, Enriched media, Enrichment media.

UNIT IV:

Microbial growth and control: Growth: Growth rate and generation time, details of growth curve and its various phases.Concept of synchronous cultures, continuous and batch cultures (chemostat and turbidostat). Measurement of growth. Physical conditions required for growth: Temperature (classification of microorganisms on the basis of temperature requirements), pH etc. Pure cultures and cultural characteristics. Maintenance of pure culture. Microbial Control: Terminologies - Sterilization, disinfection, antiseptic, sanitization, germicide, microbistasis, preservative and antimicrobial agents.Mechanism of cell injury: Damage to cell wall, cell membrane, denaturation of proteins, inhibition of protein synthesis, transcription, replication, other metabolic reactions and change in supercoiling of DNA. Physical methods of control: Temperature (moist heat, autoclave, dry heat, hot air oven and incinerators), dessication, surface tension, osmotic pressure, radiation, UV light, electricity, ultrasonic sound waves, filtration. Chemical methods of control: Antiseptics and disinfectants (halogens, alcohol, gaseous sterilization. Concept of biological control.

UNIT V

Cell Biology: Eukaryotic Cell - Structure and function of the following: nucleus, nuclear membrane, nucleoplasm, nucleolus, golgi complex, Mitochandria, Chloroplast, endoplasmic reticulum, lysosomes, peroxisomes, glyoxisomes and vacuoles.

Reference books:

1. Microbiolgoy-Concept and applications, Pelczer M.J.J, E.C.S. Chang & N.R.Krieg, 1993. McGraw Hill company New York
2. Microbiology. Prescot L.M, J.D. Harley & D. A. Klein, 1999. McGraw Hill
3. General Microbiology, Stanier, 1986. McMillan Publishing Co
4. Microbiology - An Introduction, 4th Edition, Gerard J. Tortora, Berdell R.Funke, Christine L. Care, 1992. The Benjamin/Cummings Publishing Company, Inc

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DEPARTMENT OF BIOTECHNOLOGY

SYLLABUS 2018-2019

II SEMESTER

B. Sc. SEMESTER II

PAPER-II : MACROMOLEULES, ENZYMOLOGY AND BIOENERGETICS

UNIT I

Nucleic Acids and Chromosomes: Chemical structure and base composition of nucleic acids, Chargaff's rules, Watson Crick Model (B-DNA), deviations from Watson-Crick model, other forms of DNA (A- and Z-DNA), forces stabilizing nucleic acid structures, (hydrogen bonds and hydrophobic associations, base stacking).

UNIT II

Amino acids and Proteins: Structure of amino acids occurring in proteins, classification of amino acids (pH based, polarity based and nutrition based physico-chemical properties of amino acids. Primary, Secondary, Tertiary & Quaternary structure of proteins.

UNIT III

Carbohydrates:Definition, classification, nomenclature of carbohydrates, structures of monosaccharides, disaccharides and polysaccharides. Concept and examples of heteropolysaccharides.

Lipid:Types of lipids, structures of saturated and unsaturated fatty acids, triglycerides, phospholipids, Concept of acid value, saponification value and iodine value. Chemistry of Porphyrines, Heme, Cytochromes, and Chlorophylls.

UNIT IV

Enzymes: Terminology: Active site, allosteric site, Holoenzyme, apoenzyme, coenzyme, substrate, inhibitor, activator, modulator etc. Classification and nomenclature of enzymes. Substrate Specificity (bond specificity, group specificity, absolute specificity,

stereospecificity), lock and key and induced fit models. Enzyme kinetics: Michaelis-Menten equation, effect of substrate concentration, effect of enzyme concentration, effect of p H and temperature, temperature. Enzyme inhibition kinetics (reversible inhibition types – competitive, uncompetitive and non-competitive), brief idea of irreversible inhibition.

UNIT V

Bioenergetics: Concept of free energy, Entropy, Enthalpy & Redox Potential. Concept of high energy bonds as related to the structure of ATP, Phosphoenolpyruvate, Creatine phosphate etc. Glycolysis (pathway, entry of other monosachharides and disaccharides, regulation, inhibitors) Gluconeogenesis: Bypass reactions.

References:

1. Lehninger. 2000. Principles of Biochemistry, CBS Publishers
2. Stryer, L., 2002. Biochemistry. W.H. Freeman
3. Harper, 2003. Biochemistry. McGraw-Hill
4. Voet, D. and Voet, J.G. 1995. Biochemistry

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DEPARTMENT OF BIOTECHNOLOGY

SYLLABUS 2018-2019

III SEMESTER

B.Sc., SEMESTER III

PAPER- III : BIOPHYSICAL TECHNIQUES

UNIT – I

Spectrophotometry: Spectrum of light, absorption of electromagnetic radiations, Beer's law - derivation and deviations, extinction coefficient. Instrumentation of Colorimeter; UV and visible spectrophotometry, Double beam spectrometer; dual-wavelength spectrometer, Applications of UV and visible spectrophotometry.

UNIT II:

Chromatography: Partition principle, partition coefficient, nature of partition forces, brief account of paper chromatography. Thin layer chromatography and column chromatography.Gel filtration: Principle, instrumentation and applications .Ionexchange chromatography: Principle, instrumentation and applications Affinity chromatography: Principle, instrumentation and applications .HPLC

UNIT III

Electrophoresis: Migration of ions in electric field, Factors affecting electrophoretic mobility., Gel electrophoresis: - Types of gels, .SDS-PAGE Electrophoresis and applications. Agarose gel electrophoresis, applications. Isoelectric focusing.Pulsed-field gel electrophoresis.

UNIT – IV:

Isotopic tracer technique: Radioactive & stable isotopes, rate of radioactive decay. Units of radioactivity. Concept of measurement of radioactivity, Cerenkov radiation. Measurement of

Stable isotopes: Falling drop method for deuterium measurement, Principles of tracer technique, advantages and limitations, applications of isotopes in biotechnology

UNIT V:

Centrifugation: Basic principles, concept of RCF, types of centrifuges (clinical, high speed and ultracentrifuges). Preparative centrifugation: Differential and density gradient centrifugation, applications (Isolation of cell components). Analytical centrifugation: Sedimentation coefficient, determination of molecular weight by sedimentation velocity and sedimentation equilibrium methods.

Biostatistics Basic concepts of mean, median, mode, Standard deviation and Standard error. Introduction to ANOVA

Reference books:

1. Wilson, K. & Walker, J., 2000. Practical Biochemistry.
2. Biophysical chemistry – **Upadhyay,** Himalaya Publication edition 3, 2005.
3. Fundamentals Of Biostatistics by Khan (Author), Khanum Ukaaz Publications Hyderabad.

DEPARTMENT OF BIOTECHNOLOGY

SYLLABUS 2018-2019

IV SEMESTER

B. Sc. SEMESTER IV

PAPER-IV: IMMUNOLOGY

UNIT I

Immune system: History and introduction to immunology; Organs and cells of immune system; Immunity- types; innate immune mechanism, Acquired immune mechanism.

UNIT II

Antibody and Antigen: Antibody structure and classes, Antibody diversity, Types of Antigens, Antigenecity (factors affecting antigenecity), hapten. Complement system.

UNIT III

Immunity: Cell mediated immunity: TC mediated immunity, NK cell mediated immunity, ADCC, brief description of cytokines and MHC (MHC types and diversity), Primary and secondary immune response; Humoral immunity

UNIT IV

Hypersensitivity and vaccination : General features of hypersensitivity, various types of hypersensitivity, Autoimmunity – any two diseases as examples; Vaccination: Discovery, principles, significance, Types of Vaccines.

UNIT V

Immunological Techniques: Antigen-antibody reactions: Precipitation, agglutination, complement fixation, immunodiffusion, ELISA. Hybridoma technology: Monoclonal antibodies and their applications in immunodiagnosis.

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DEPARTMENT OF BOTANY

SYLLABUS 2018-2019

III SEMESTER

10

II B. Sc - SEMESTER –III: BOTANY THEORY PAPER –III

Paper-III : Plant Taxonomy and Embryology)

Total hours of teaching 60hrs @ 4 hrs per week

UNIT – I: INTRODUCTION TO PLANT TAXONOMY (12hrs)

1. Fundamental components of taxonomy (identification, nomenclature, classification)
2. Taxonomic resources: Herbarium- functions& important herbaria, Botanical gardens, Flora.
3. Botanical Nomenclature- Principles and rules of ICBN (ranks and names; principle of priority, binomial system; type method, author citation, valid-publication).

UNIT – II: CLASSIFICATION **(12 hrs)**

1. Types of classification- Artificial, Natural and Phylogenetic.
2. Bentham & Hooker's system of classification- merits and demerits.
3. Engler & Prantle's system of classification- merits and demerits
4. Phylogeny – origin and evolution of Angiosperms

UNIT –III: SYSTEMATIC TAXONOMY-I

(12hrs)

1. Systematic study and economic importance of the following families: Annonaceae, Brassicaceae, Rutaceae, Curcurbitaceae, and Apiaceae.

UNIT –IV: SYSTEMATIC TAXONOMY-II **(12hrs)**

1. Systematic study and economic importance of plants belonging to the following families: Asteraceae, Asclepiadaceae, Lamiaceae, Ephorbiaceae,Arecaceae,and Poaceae.

UNIT – V: EMBRYOLOGY **(12hrs)**

1. Anther structure, microsporogenesis and development of male gametophyte.
2. Ovule structure and types; Megasporogenesis, development of Monosporic, Bisporic and Tetrasporic types (*Peperomia ,Drusa, Adoxa*) of embryo sacs.
3. Pollination and Fertilization (out lines) Endosperm development and types.
4. Development of Dicot and Monocot embryos, Polyembryony.

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DEPARTMENT OF BOTANY

SYLLABUS 2018-2019

IV SEMESTER

II B.Sc. BOTANY, SEMESTER- IV, Paper-IV: THEORY SYLLABUS

PAPER –IV: Plant Physiology and Metabolism

Total hours of teaching 60hrs @ 4 hrs per week

UNIT – I: Plant – Water relations **(12 hrs)**

1. Physical properties of water, Importance of water to plant life.
2. Diffusion, imbibition and osmosis; concept & components of Water potential.
3. Absorption and transport of water and ascent of sap.
4. Transpiration –Definition, types of transpiration, structure and opening and closing mechanism of stomata.

UNIT –II: Mineral nutrition & Enzymes **(12hrs)**

1. Mineral Nutrition: Essential elements (macro and micronutrients) and their role in plant metabolism, deficiency symptoms.
2. Mineral ion uptake (active and passive transport).
3. Nitrogen metabolism- biological nitrogen fixation in *Rhizobium*, outlines of protein synthesis (transcription and translation).
4. Enzymes: General characteristics, mechanism of enzyme action and factors regulating enzyme action.

UNIT –III: PHOTOSYNTHESIS **(12 hrs)**

1. Photosynthesis: Photosynthetic pigments, photosynthetic light reactions, photo-phosphorylation, carbon assimilation pathways: C_3, C_4, and CAM (brief account)
2. Photorespiration and its significance.
3. Translocation of organic solutes: mechanism of phloem transport, source-sink relationships.

UNIT – IV: PLANT METABOLISM **(12 hrs)**

1. Respiration: Glycolysis, anaerobic respiration, TCA cycle, electron transport system. Mechanism of oxidative phosphorylation.
2. Lipid Metabolism: Types of lipids, Beta-oxidation.

UNIT –V: GROWTH AND DEVELOPMENT **(12hrs)**

1. Growth and development: definition, phases and kinetics of growth.
2. Physiological effects of phytohormones - Auxins, Gibberellins, Cytokinins, ABA and Ethylene.
3. Physiology of flowering -photoperiodism, role of phytochrome in flowering: Vernalization

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DEPARTMENT OF CHEMISTRY

SYLLABUS 2018-2019

I SEMESTER

SEMESTER – I

Paper I - Inorganic & Organic Chemistry 60hrs (4h/w)

INORGANIC CHEMISTRY **30 hrs (2h / w)**

UNIT –I

p-block elements –I **15h**

Group-13: Synthesis and structure of diborane and higher boranes (B_4H_{10} and B_5H_9), boron-nitrogen compounds ($B_3N_3H_6$ and BN)

Group - 14: Preparation and applications of silanes and silicones.

Group - 15: Preparation and reactions of hydrazine, hydroxylamine.

UNIT-II

1. p-block elements -II **8h**

Group - 16: Classifications of oxides based on (i) Chemical behaviour and (ii) Oxygen content.

Group-17: Inter halogen compounds and pseudo halogens.

2. Organometallic Chemistry **7h**

Definition - classification of Organometallic compounds - nomenclature, preparation, properties and applications of alkyls of Li and Mg.

ORGANIC CHEMISTRY **30hrs (2h /w)**

UNIT-III

Structural theory in Organic Chemistry **10 h**

Types of bond fission type of organic reagents (Electrophilic, Nucleophilic, and free radical reagents including neutral molecules like H_2O, NH_3 & $AlCl_3$).

Inductive effect. Application of inductive effect (a) Basicity of amines (b) Acidity of carboxylic acids (c) Stability of carbonium ions. Resonance or Mesomeric effect, application to (a) acidity of phenol, and (b) acidity of carboxylic acids. Hyper conjugation and its application to stability of carbonium ions, Free radicals and alkenes,

Types of Organic reactions : Addition - electrophilic, nucleophilic and free radical. Substitution - electrophilic, nucleophilic and free radical reactions. Elimination-Examples.

UNIT-IV

1. **Acyclic Hydrocarbons** **6 h**

Alkenes - Addition of halogen. Addition of HX, Markonikov's rule (with mechanism), addition of H_2O, HOX, H_2SO_4 and addition of HBr in the presence of peroxide (anti - Markonikov's addition). Dienes - Types of dienes, reactions of conjugated dienes - 1,2 and 1,4 addition of HBr to 1,3 - butadiene and Diel's - Alder reaction.

Alkynes – Terminal and non terminal Alynes. Properties; Acidity of acetylenic hydrogen (formation of Metal acetylides). Electrophilic addition of X_2, HX, H_2O (Tautomerism), Oxidation with $KMnO_4$, OsO_4, Metal Ammonia reduction and Polymerisation reaction of acetylene.

2. **Alicyclic hydrocarbons (Cycloalkanes)** **4 h**

Nomenclature, Preparation by Freunds method, Wislicenus method. Properties - Stability of cycloalkanes - Baeyer's strain theory, Sachse and Mohr predictions and Pitzer's strain theory.

UNIT-V

Benzene and its reactivity **10h**

Concept of aromaticity - aromaticity (definition), Huckel's rule - application to Benzenoid (Benzene, Naphthalene) and Non - Benzenoid compounds (cyclopropenyl cation, cyclopentadienyl anion and tropylium cation), Molecular structure of Benzenebased on modern concepts (VBT and MOT).

Reactions - Mechanism of nitration, Friedel Craft's alkylation and acylation. Orientation of aromatic substitution - Definition of ortho, para and meta directing groups. Ring activating and deactivating groups with examples (i) Amino, methoxy and methyl groups (ii) Carboxy, nitro, nitrile, carbonyl and sulphonic acid groups (iii) Halogens

DEPARTMENT OF CHEMISTRY

SYLLABUS 2018-2019

II SEMESTER

SEMESTER - II

Paper II (Physical & General Chemistry) 60 hrs. (4h/w)

PHYSICAL CHEMISTRY 30 hrs (2h / w)

UNIT-I

Solidstate 10h

Symmetry in crystals. Law of constancy of interfacial angles. The law of rationality of indices. The law of symmetry. Definition of lattice point, space lattice, unit cell. Bravis lattices and crystal systems. X-ray diffraction and crystal structure. Bragg's law. Defects in crystals.

UNIT-II

1.Gaseous state 6 h

Deviation of real gases from ideal behavior. Vander Waal's equation of state. P-V Isotherms of real gases, Andrew's isotherms of carbon dioxide, continuity of state. Critical phenomena. The vander Waal's equation and the critical state. Law of corresponding states.Relationship between critical constants and vander Waal's constants. Joule Thomson effect.

2.Liquid state 4 h

Structural differences between solids, liquids and gases. Liquid crystals, the mesomorphic state. Classification of liquid crystals into Smectic and Nematic. Differences between liquid crystal and solid/liquid. Application of liquid crystals as LCD devices.

UNIT-III

Solutions 10h

Liquid-liquid - ideal solutions, Raoult's law. Ideally dilute solutions, Henry's law. Non-ideal solutions. Vapour pressure - composition and vapour pressure- temperature curves. Azeotropes-HCl-H_2O, ethanol-water systems and fractional distillation. Partially miscible liquids-phenol-water, trimethylamine-water, nicotine-water systems. Effect of impurity on consulate temperature. Immiscible liquids and steam distillation.

GENERAL CHEMISTRY **30 hrs (2h / w)**

UNIT-IV

1.Surface chemistry **8 h**

Definition of colloids. SOLS- properties - kinetic, optical, electrical. Stability of colloids, Hardy-Schulze law, protective colloid.

Liquids in liquids (emulsions)-properties and uses. Liquids in solids (gels) uses.

Adsorption: Physical adsorption, chemisorption. Freundlisch, Langmuir adsorption isotherms. Applications of adsorption

2.Chemical Bonding **7h**

Valence bond theory, hybridization, VB theory as applied toClF_3, $Ni(CO)_4$, Molecular orbital theory - LCAO method, construction of M.O. diagrams for homo-nuclear and hetero-nuclear diatomic molecules (N_2, O_2, CO and NO).

UNIT-V

Stereochemistry of carbon compounds **15 h**

Optical isomerism: Optical activity- wave nature of light, plane polarised light, optical rotation and specific rotation.

Chiral molecules- definition and criteria(Symmetry elements)- Definition of enantiomers and diastereomers – Explanation of optical isomerism with examples Glyceraldehyde, Lactic acid, Alanine, Tartaric acid, 2,3-dibromopentane.

D,L and R,S configuration methods and E,Z- configuration with examples.

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DEPARTMENT OF CHEMISTRY

SYLLABUS 2018-2019

III SEMESTER

SEMESTER - III

Paper III (INORGANIC & ORGANIC CHEMISTRY) 60 hrs (4 h / w)

INORGANIC CHEMISTRY **30 hrs (2h / w)**

UNIT –I

1. Chemistry of d-block elements: **9h**

Characteristics of d-block elements with special reference to electronic configuration, variable valence, magnetic properties, catalytic properties and ability to form complexes. Stability of various oxidation states

2. Theories of bonding in metals:

6h

Metallic properties and its limitations, Valence bond theory, Free electron theory, Explanation of thermal and electrical conductivity of metals, limitations, Band theory, formation of bands, explanation of conductors, semiconductors and insulators.

UNIT – II

3.Metal carbonyls : **7h**

EAN rule, classification of metal carbonyls, structures and shapes of metal carbonyls of V, Cr, Mn, Fe, Co and Ni.

4. Chemistry of f-block elements: **8h**

Chemistry of lanthanides - electronic structure, oxidation states, lanthanide contraction, consequences of lanthanide contraction, magnetic properties. Chemistry of actinides - electronic configuration, oxidation states, comparison of lanthanides and actinides.

ORGANIC CHEMISTRY **30 h (2h/w)**

UNIT – III

1. Halogen compounds **5 h**

Nomenclature and classification of alkyl (into primary, secondary, tertiary), aryl, aryl alkyl, allyl, vinyl, benzyl halides.

SN^1 and SN^2 – reaction mechanism with optically active alkyl halide 2-bromobutane.

2. Hydroxy compounds 5 h

Nomenclature and classification of Alcohols: Preparation with hydroboration reaction and Grignard synthesis. Physical properties- Hydrogen bonding (intermolecular and intramolecular). Effect of hydrogen bonding on boiling point and solubility in water. Chemical properties:

a) Dehydration of alcohols.

b) Oxidation of alcohols by CrO_3, $KMnO_4$.

Identification of alcohols by oxidation with $KMnO_4$, Ceric ammonium nitrate, Luca's reagent .

Phenols: Preparation i) from diazonium salt, ii) from cumene.

Chemical Properties: a)Bromination, b) Kolbe-Schmidt reaction(with mechanism)

c) Riemer-Tiemann reaction, (with mechanism), d) azocoupling,

Identification of Phenol with neutral $FeCl_3$

UNIT-IV

Carbonyl compounds **10 h**

Nomenclature of aliphatic and aromatic carbonyl compounds, Synthesis of aldehydes from acid chlorides, synthesis of ketones from nitriles. Physical properties: Reactivity of carbonyl group in aldehydes and ketones.

Nucleophilic addition reaction with a) $NaHSO_3$, b) HCN, c) RMgX, d) NH_2OH, e)$PhNHNH_2$, f) 2,4 DNPH, With mechanism a) Aldol, b) Cannizzaro's reaction, c) Perkin reaction, d) Benzoin condensation, Reduction: Clemmensen reduction, Wolf-Kishner reduction, MPV reduction, reduction with $LiAlH_4$ and $NaBH_4$. Analysis of aldehydes and ketones with a) 2,4-DNPH test, b) Tollen's test, c) Fehling test, d) Schiff's test e) Haloform test (with equation)

UNIT-V

1. Carboxylic acids and derivatives **6 h**

Nomenclature, classificatio of carboxylic acids. Methods of preparation by Hydrolysis of nitriles, amides and esters (by acids and bases), c) Carbonation of Grignard reagents. Special methods of preparation of aromatic acids by a) Oxidation of side chain. b) Hydrolysis by benzotrichlorides. c) Kolbe reaction. **Physical properties**: Hydrogen bonding, dimeric association, **Chemical properties**: Reactions involving H, OH and COOH groups- salt formation, anhydride formation, acid chloride formation, amide formation and esterification (mechanism). Degradation of carboxylic acids by

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DEPARTMENT OF CHEMISTRY

SYLLABUS 2018-2019

IV SEMESTER

SEMESTER IV
Paper IV (SPECTROSCOPY & PHYSICAL CHEMISTRY)
60 hrs (4 h / w)

SPECTROSCOPY **30 hrs**
(2h / w)

UNIT-I **6h**

Beer-Lambert's law and its limitations, transmittance, absorbance and molar absorptivity. Application of Beer-Lambert law for quantitative analysis of 1. Chromium in $K_2Cr_2O_7$

2. Manganese in Manganous sulphate

Electronic spectroscopy: **8h**

Interaction of electromagnetic radiation with molecules and types of molecular spectra. Energy levels of molecular orbitals (σ, π, n). Selection rules for electronic spectra. Types of electronic transitions in molecules effect of conjugation. Concept of chromophore and auxochrome.

UNIT-II

Infra red spectroscopy **8h**

Different Regions in Infrared radiations. Modes of vibrations in diatomic and polyatomic molecules. Characteristic absorption bands of various functional groups. Interpretation of spectra-Alkanes, Aromatic, Alcohols carbonyls, and amines with one example to each.

Proton magnetic resonance spectroscopy (^{1}H-NMR) **8h**

Principles of nuclear magnetic resonance, equivalent and non-equivalent protons, position of signals. Chemical shift, NMR splitting of signals - spin-spin coupling, coupling constants. Applications of NMR with suitable examples - ethyl bromide, ethanol, acetaldehyde, 1,1,2-tribromo ethane, ethyl acetate, toluene and acetophenone.

PHYSICAL CHEMISTRY **30 hrs (2h / w)**

UNIT-III

Dilute solutions **10h**

Colligative properties. Raoult's law, relative lowering of vapour pressure, its relation to molecular weight of non-volatile solute. Elevation of boiling point and depression of freezing point. Derivation of relation between molecular weight and elevation in boiling point and depression in freezing point. Experimental methods of determination. Osmosis, osmotic pressure, experimental determination. Theory of dilute solutions. Determination of molecular weight of non-volatile solute from osmotic pressure. Abnormal Colligative properties- Van't Hoff factor.

UNIT-IV

Electrochemistry-I **10h**

Specific conductance, equivalent conductance. Variation of equivalent conductance with dilution. Migration of ions, Kohlrausch's law. Arrhenius theory of electrolyte dissociation and its limitations. Ostwald's dilution law. Debye-Huckel-Onsagar's equation for strong electrolytes (elementary treatment only). Definition of transport number, determination by Hittorfs method. Application of conductivity measurements- conductometric titrations.

UNIT-V

1. Electrochemistry-II **4h**

Single electrode potential, sign convention, Reversible and irreversible cells Nernst Equation- Reference electrode, Standard Hydrogen electrode, calomel electrode, Indicator electrode, metal – metal ion electrode, Inert electrode, Determination of EMF of cell, Applications of EMF measurements - Potentiometric titrations.

2.Phase rule **6h**

Concept of phase, components, degrees of freedom. Thermodynamic Derivation of Gibbs phase rule. Phase equilibrium of one component system - water system. Phase equilibrium of two- component system, solid-liquid equilibrium. Simple eutectic diagram of Pb-Ag system, simple eutectic diagram, desilverisation of lead., NaCl-Water system.

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DEPARTMENT OF COMPUTER SCIENCE

SYLLABUS 2018-2019

I SEMESTER

Structure of Computer Science/Information Technology (IT) Syllabus

I YEAR II SEMESTER

Paper-II : PROGRAMMING IN C

Course Objectives

1. Learn how to solve common types of computing problems.
2. Learn data types and control structures of C
3. Learn to map problems to programming features of C.
4. Learn to write good portable C programs.

Course Outcomes

Upon successful completion of the course, a student will be able to:

1. Appreciate and understand the working of a digital computer
2. Analyze a given problem and develop an algorithm to solve the problem
3. Improve upon a solution to a problem
4. Use the 'C' language constructs in the right way
5. Design, develop and test programs written in 'C'

UNIT I

Introduction to Algorithms and Programming Languages: Algorithm – Key features of Algorithms, Flow Charts.

Introduction to C: Introduction – Structure of C Program – Writing the first C Program – File used in C Program – Compiling and Executing C Programs – Using Comments – Keywords – Identifiers – Basic Data Types in C – Variables – Constants – I/O Statements in C- Operators in C- Programming Examples – Type Conversion and Type Casting

UNIT II

Decision Control and Looping Statements: Introduction to Decision Control Statements – Conditional Branching Statements – Iterative Statements – Nested Loops – Break and Continue Statement – Goto Statement

UNIT III

Arrays: Introduction – Declaration of Arrays – Accessing elements of the Array – Storing Values in Array, Operations on Array: One dimensional array, Two dimensional Arrays, Multidimensional Arrays.

Strings: Introduction, Characters, String handling functions.

Functions: Introduction – using functions – Function declaration/ prototype – Function definition – function call – return statement – Passing parameters – Scope of variables – Storage Classes – Recursive functions

UNIT IV

Pointers: Understanding Computer Memory – Introduction to Pointers – declaring Pointer Variables - - Passing Arguments to Functions using Pointer – Pointer and Arrays – Passing Array to Function.

Structure, Union, and Enumerated Data Types: Introduction – Nested Structures – Arrays of Structures – Structures and Functions – Unions – Enumerated Data Types

UNIT V

Files: Introduction to Files – Using Files in C – Reading Data from Files – Writing Data from Files – Detecting the End-of-file – Error Handling during File Operations – Accepting Command Line Arguments.

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1. Introduction to C programming by REEMA THAREJA from OXFORD UNIVERSITY PRESS
2. E Balagurusamy: —COMPUTING FUNDAMENTALS & C PROGRAMMING – Tata McGraw-Hill, Second Reprint 2008, ISBN 978-0-07-066909-3.
3. Ashok N Kamthane: Programming with ANSI and Turbo C, Pearson Edition Publ. 2002.
4. Henry Mullish & Huubert L.Cooper: The Spirit of C An Introduction to modern Programming, Jaico Pub. House,1996.

Student Activity:

1. **Write a program for preparing the attendance particulars of students of your college at the end of semester according to following guidelines**
   a. **Above 75 % promoted**
   b. **Above 65% condoned**
   c. **Below 65% detained**
2. **Write a program for creating timetable or your class taking work load of faculty into consideration.**

DEPARTMENT OF COMPUTER SCIENCE

SYLLABUS 2018-2019

II SEMESTER

I YEAR II SEMESTER

Paper-II : PROGRAMMING IN C

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DEPARTMENT OF COMPUTER SCIENCE

SYLLABUS 2018-2019

III SEMESTER

Structure of Computer Science/Information Technology (IT) Syllabus

II YEAR III SEMESTER
Paper-III : OBJECT ORIENTED PROGRAMMING USING JAVA

Course Objectives

As the business environment becomes more sophisticated, the software development (software engineering is about managing complexity) is becoming increasingly complex. As of the best programming paradigm which helps to eliminate complexity of large projects, Object Oriented Programming (OOP) has become the predominant technique for writing software in the past decade. Many other important software development techniques are based upon the fundamental ideas captured by object-oriented programming.

Course Outcomes

At the end of this course student will:

1. Understand the concept and underlying principles of Object-Oriented Programming
2. Understand how object-oriented concepts are incorporated into the Java programming language
3. Develop problem-solving and programming skills using OOP concept
4. Understand the benefits of a well structured program
5. Develop the ability to solve real-world problems through software development in high-level programming language like Java
6. Develop efficient Java applets and applications using OOP concept
7. Become familiar with the fundamentals and acquire programming skills in the Java language.

UNIT – I

FUNDAMENTALS OF OBJECT – ORIENTED PROGRAMMING: Object Oriented paradigm –Basic concepts of Object Oriented Programming – Benefits of OOP –Applications of OOP.

Overview of Java Language: Simple Java Program – Java Program Structure – Java Tokens- Java Statements – Implementing a Java Program – Java Virtual Machine – Command Line Arguments.

Constants, Variables and Data types: Constants – Variables – Data types – Declaration of Variables-Giving Values to variables- Scope of Variables-Symbolic Constants-Type Casting.

UNIT – II

Operators and Expressions: Arithmetic Operators – Relational Operators- Logical Operators – Assignment Operators – Increment and Decrement Operators – Conditional Operators – Bitwise Operators – Special Operators – Arithmetic Expressions – Evaluation of Expressions – Precedence of Arithmetic Operators – Operator Precedence and Associativity.

Decision Making and Branching: Decision Making with If statement – Simple If Statement-If else Statement-Nesting If Else Statement- the Else If Ladder-The switch Statement – The ?: operator.

Decision Making and Looping: The while statement – The do statement – The for statement – Jumps in Loops, labelled loops.

UNIT – III

Class, Objects and Methods: Defining a Class – Fields Declaration – Methods Declaration – Creating Objects – Accessing class members – Constructors – Methods Overloading – Static Members – Nesting of Methods, Inheritance – Overriding Methods – Final Variables and Methods – Final Classes – Abstract Methods and Classes – Visibility Control.

Arrays, Strings and Vectors: One-dimensional Arrays-creating an Array – Two dimensional Arrays – Strings – Vectors – Wrapper Classes – Enumerated Types.

UNIT – IV

Interfaces: Multiple Inheritance - Defining Interfaces – Extending Interfaces – Implementing Interfaces – Accessing Interface Variables.

Packages: Java API packages – Using system Packages – Naming Conventions – Creating Packages – Accessing a Package – Using a Package – Adding a Class to a Package – Hiding Classes – Static Import.

Multithreaded Programming: Creating Threads – Extending the Thread Class – Stopping and Blocking a Thread – Life Cycle of a Thread –Using Thread Methods –Thread Exceptions – Thread Priority – Synchronization.

UNIT - V

Managing Errors and Exceptions: Types of Errors – Exceptions – Syntax of Exception Handling Code – Multiple Catch Statements – Using Finally Statement – Throwing our own Exceptions – Using Exceptions for debugging.

Applet Programming: How Applets differ from Applications – Preparing to write Applets – Building Applet Code – Applet Life Cycle – Creating an executable Applet – Designing a WebPage – Applet Tag – Adding Applet to HTML file – Running the Applet – More about Applet Tag – Passing parameters to Applets – Aligning the display – More about HTML tags – Displaying Numerical Values – Getting Input from the user.

DEPARTMENT OF COMPUTER SCIENCE

SYLLABUS 2018-2019

IV SEMESTER

II YEAR IV SEMESTER

Paper-IV: DATA STRUCTURES

Course Objectives

To introduce the fundamental concept of data structures and to emphasize the importance of data structures in developing and implementing efficient algorithms..

Course Outcomes

After completing this course satisfactorily, a student will be able to:

1. Describe how arrays, records, linked structures, stacks, queues, trees, and graphs are represented in memory and used by algorithms
2. Describe common applications for arrays, records, linked structures, stacks, queues, trees, and graphs.
3. Write programs that use arrays, records, linked structures, stacks, queues, trees, and graphs
4. Demonstrate different methods for traversing trees
5. Compare alternative implementations of data structures with respect to performance
6. Compare and contrast the benefits of dynamic and static data structures implementations
7. Describe the concept of recursion, give examples of its use, describe how it can be implemented using a stack .
8. Discuss the computational efficiency of the principal algorithms for sorting, searching, and hashing.

UNIT I

Concept of Abstract Data Types (ADTs)- Data Types, Data Structures, Storage Structures, Primitive and Non-primitive Data Structures, Linear and Non-linear Data Structures.
Linear Lists – ADT, Array and Linked representations, Pointers.

Linked Lists: Single Linked List, Double Linked List, Circular Linked List , applications

UNIT II

Stacks: Definition, ADT, Array and Linked representations, Implementations and Applications
Queues: Definition, ADT, Array and Linked representations, Circular Queues, Dequeues, Priority Queues, Implementations and Applications.

UNIT III

Trees: Binary Tree, Definition, Properties, ADT, Array and Linked representations, Implementations and Applications. Binary Search Trees (BST) – Definition, ADT, Operations and Implementations, BST Applications. Introduction to Threaded Binary Trees, Heap trees.

UNIT IV

Graphs – Graph and its Representation, Graph Traversals, Connected Components, Basic Searching Techniques, Minimal Spanning Trees

UNIT- V

Sorting and Searching: Selection, Insertion, Bubble, Merge, Quick, Heap sort, Sequential and Binary Searching.

REFERENCE BOOKS

1. D S Malik, Data Structures Using C++, Thomson, India Edition 2006.
2. Sahni S, Data Structures, Algorithms and Applications in C++, McGraw-Hill, 2002.
3. SamantaD, Classic Data Structures, Prentice-Hall of India, 2001.
4. Heilman G L, Data Structures and Algorithms with Object-Oriented Programming, Tata McGraw-I lill. 2002. (Chapters I and 14).
5. Tremblay P, and Sorenson P G, Introduction to Data Structures with Applications, Tata McGraw-Hill,

Student activity:

1. **Create a visible stack using C-graphics**
2. **Create a visible Queue using C-graphics**

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DEPARTMENT OF ELECTRONICS

SYLLABUS 2018-2019

I SEMESTER

B.Sc. Electronics Syllabus under CBCS

w.e.f. 2015-16 (revised in April 2016)

SEMESTER-1 **PAPER – I**

BASIC CIRCUIT THEORY

UNIT- 1: (12Hrs)

SINUSOIDAL ALTERNATING WAVEFORMS:

Definition of current and voltage. The sine wave, general format of sine wave for voltage or current, phase relations, average value, effective (R.M.S) values. Differences between A.C and D.C. **Basic elements and phasors:** Basic Response of R, L & C elements, frequency response of basic elements. **(problems)**

UNIT-II: (12hrs)

PASSIVE NETWORKS: (D.C)

Kirchhoff's current and Voltage Law's ,Resistor, Capacitor, and Inductor, series and parallel networks,R-L and R-L-C Circuits with DC inputs. Branch current method, Mesh Analysis, Nodal Analysis, star to delta & delta to star conversions.

UNIT-III: (14hrs)

NETWORKS THEOREMS: (D.C)

Superposition Theorem, Thevenin's Theorem, Norton's Theorem, Maximum Power, Milliman and Reciprocity theorems **(problems).**

UNIT-IV: (12hrs)

RC AND RL CIRCUITS:

Transient response of RL and RL circuits with step input, Time constants, Frequency response of RC and RL circuits, their action as low pass, high pass and Band pass filters. Passive differentiating and integrating circuits. (problems)

UNIT-V: (10hrs)

SERIES AND PARALLEL RESONANCE CIRCUITS:

Series resonance and parallel resonance circuits, Q - Factor, Selectivity and band width, Comparison of series and parallel resonance, Tank circuit-LC oscillations.

TEXT BOOKS:

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DEPARTMENT OF ELECTRONICS

SYLLABUS 2018-2019

II SEMESTER

B.Sc. Electronics Syllabus under CBCS

w.e.f. 2015-16 (revised in April 2016)

Semester-2 **PAPER – 2**

Electronic Devices and Circuits

UNIT 1: (12Hrs)

PN JUNCTION DIODES:

P-N junction Diode, Depletion region, Barrier Potential, Working in Forward and Reverse bias condition – Junction capacitance ,Diode current equation– Effect of temperature on reverse saturation current – construction, working, V-I characteristics and simple applications of varactor diode, Zener diode and Tunnel diode.

UNIT –II:(12hrs)

BIPOLAR JUNCTION TRANSISTOR AND ITS BIASING: (D.C)

Introduction, Transistor Construction, Operation, and characteristics of CB, CE, and CC – Configurations. Complete hybrid equivalent model, Transistor as a switch

BJT Biasing: Fixed-Bias Circuit, Emitter-Stabilized Bias Circuit, Voltage-Divider Bias, Bias Stabilization.

UNIT-III:(16hrs)

FIELD EFFECT TRANSISTORS , UJT & SCR:

Introduction, Construction, Operation and Characteristics of FET/JFET, Drain and Transfer characteristics, Depletion-type, and Enhancement-Type MOSFETs.

FET Biasing: Fixed-Bias Configuration, Self-Bias Configuration, Voltage-Divider Biasing, UJT construction-working, V-I characteristics, UJT as a Relaxation oscillator.

UNIT IV: (08hrs)

PHOTO ELECTRIC DEVICES:

Light-Emitting Diodes (LEDs), IR Emitters, Photo diode, Photo transistors, Structure and operation of LDR, and Opto-Isolators.

UNIT-V:(12hrs)

POWER SUPPLIES:

Rectifiers::Half wave ,full wave and bridge rectifiers-Efficiency-ripple factor-Regulation, Types of filter-choke input(inductor) filter,shunt,L-section&π-section filters,Three terminal fixed voltage I.C.regulators(78XX and &79XX)-Principle and working of SMPS(switch mode power supplies)

TEXT BOOKS:

1. Electronic Devices and Circuit Theory --- **Robert L. Boylestad & Louis Nashelsky.**
2. Electronic Devices and Circuits I – **T.L.Floyd- PHI Fifth Edition**

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III SEMESTER

B.Sc. Electronics Syllabus under CBCS

w.e.f. 2015-16 (revised in April 2016)

SEMESTER – III **PAPER – 3**

Digital Electronics

Unit – I (9hrs)

NUMBER SYSTEM AND CODES: Decimal, Binary, Hexadecimal, Octal, BCD, Conversions, Complements (1's, 2's,9's and 10's), Addition, Subtraction, Gray, Excess-3 Code conversion from one to another.

Unit- II (12hrs)

BOOLEAN ALGEBRA AND THEOREMS: Boolean Theorems, De-Morgan's laws. Digital logic gates, Multi level NAND & NOR gates. Standard representation of logic functions (SOP and POS), Minimization Techniques (Karnaugh Map Method: 4,5 variables),don't care condition.

Unit-III (15hrs)

COMBINATIONAL DIGITAL CIRCUITS:

Adders-Half & full adder, Subtractor-Half and full subtractors, Parallel binary adder, Magnitude Comparator, Multiplexers (2:1,4:1)) and Demultiplexers (1:2,4:1), Encoder

(8-line-to-3-line) and Decoder (3-line-to-8-line). IC-LOGIC FAMILIES: TTL logic, DTL logic, RTL Logic, CMOS Logic families (NAND&NOR Gates),Bi-CMOS inverter

UNIT-IV (14hrs)

SEQUENTIAL DIGITAL CIRCUITS:
Flip Flops: S-R FF , J-K FF, T and D type FFs, Master-Slave FFs, Excitation tables, Registers:-shift left register, shift right register, Counters - Asynchronous-Mod16,Mod-10,Mod-8,Down counter,,Synchronous-4-bit &Ring counter.

UNIT-V (10hrs)
MEMORY DEVICES:
General Memory Operations, ROM, RAM (Static and Dynamic), PROM, EPROM, EEPROM, EAROM, PLA(Programmable logic Array),PAL(Programmable Array Logic)

TEXT BOOKS:

1. M.Morris Mano, " Digital Design " 3rd Edition, PHI, New Delhi.
2. Ronald J. Tocci. "Digital Systems-Principles and Applications" 6/e. PHI. New Delhi. 1999.(UNITS I to IV)
3. G.K.Kharate-Digital electronics-oxford university press
4. S.Salivahana&S.Arivazhagan-Digital circuits and design
5. Fundamentals of Digital Circuits by Anand Kumar

Reference Books :

1. Herbert Taub and Donald Schilling. "Digital Integrated Electronics" , McGraw Hill. 1985.
2. S.K. Bose. "Digital Systems". 2/e. New Age International. 1992.
3. D.K. Anvekar and B.S. Sonade. "Electronic Data Converters : Fundamentals & Applications". TMH. 1994.

4. *Malvino and Leach. " Digital Principles and Applications". TMG Hill Edition.*

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DEPARTMENT OF ELECTRONICS

SYLLABUS 2018-2019

IV SEMESTER

B.Sc. Electronics Syllabus under CBCS

SEMESTER – IV **PAPER – 4**

Analog and Digital ic - applictions

(Operational – Amplifiers)

Unit – I (10hrs)

OPERATIONAL AMPLIFIERS: Definition, Basic op-amp Ideal op-amp, Block diagram of op-amp, inverting, noninverting, virtualground, Adders, subtractors, summing amplifier, voltage follower, op-amp parameters, voltage to current convertor ,integrator, differentiator, differential amplifier, Logarithmic amplifier.

Unit- II (15 hrs)

OP-AMP CIRCUITS: voltage regulator, comparator ,zerocross detecting circuit, instrumentational amplifier, multivibrators-astable, monostable, Bi-stable, Schmitt trigger. sine wave generator, square wave generator, triangular wave generator, Active filters(Basics)-low pass, high pass, band pass filters

IC-555 –functional block diagram and mention it's applications

Unit-III (15hrs):

COMBINATIONAL & SEQUENTIAL LOGIC CIRCUITS (IC-Applications):

Design of Code convertor: BCD to Seven Segment ,BCD to Grey, Grey to Binary.

Design of Counters using State Machine: Mod N counter, Preset Table Binary Up/Down

Counter. Design of Universal Shift Register

UNIT-IV (10hrs)

DATA CONVERTERS:

A/D converter:- Successive Approximation ADC,-Single slope and dual slope converter, Sigma-delta ADC, D/A converter: R-2R Ladder network, Binary Weighted .

UNIT-V (10hrs)

DIGITAL SYSTEM INTERFACING AND APPLICATIONS: interfacing of LED's

Applications of Counters: Digital Clock

Applications of Shift Registers: Parallel to Serial ,Serial to Parallel, UART

TEXT BOOKS:

1. G.K.Kharate-Digital electronics-oxford university press
2. M.Morris Mano, " Digital Design " 3rd Edition, PHI, New Delhi.
3. Op Amp and Linear Integrated Circuits By Ramakant Gaykwad
4. Linear Integrated Circuits By Roy Choudary

Reference Books :

1. Jacob Millan ,Micro Electronics.McGraw Hill.
2. Mithal G K, Electronic Devices and Circuits Thana Publishers.
3. Allan Motter shead ,Electronic Devices and Circuits – An Introduction- Prentice Hall

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DEPARTMENT OF METHEMATICS

SYLLABUS 2018-2019

I SEMESTER

B.A./B.Sc. MATHEMATICS SYLLABUS
SEMESTER –I
PAPER – I : DIFFERENTIAL EQUATIONS

60 Hrs

UNIT – I (12 Hours), Differential Equations of first order and first degree :
Linear Differential Equations; Differential Equations Reducible to Linear Form; Exact Differential Equations; Integrating Factors; Change of Variables.

***UNIT – II (12 Hours),* Orthogonal Trajectories.**
Differential Equations of first order but not of the first degree :
Equations solvable for p; Equations solvable for y; Equations solvable for x; Equations that do not contain. x (or y); Equations of the first degree in x and y – Clairaut's Equation.

UNIT – III (12 Hours), Higher order linear differential equations-I :
Solution of homogeneous linear differential equations of order n with constant coefficients; Solution of the non-homogeneous linear differential equations with constant coefficients by means of polynomial operators.
General Solution of f(D)y=0
General Solution of f(D)y=Q when Q is a function of x.
$\frac{1}{f(D)}$ is Expressed as partial fractions.
P.I. of f(D)y = Q when Q= be^{ax}
P.I. of f(D)y = Q when Q is b sin ax or b cos ax.
UNIT – IV (12 Hours), Higher order linear differential equations-II :
Solution of the non-homogeneous linear differential equations with constant coefficients.
P.I. of f(D)y = Q when Q= bx^k
P.I. of f(D)y = Q when Q= $e^{ax}V$
P.I. of f(D)y = Q when Q= xV
P.I. of f(D)y = Q when Q= x^mV
UNIT –V (12 Hours), Higher order linear differential equations-III :
Method of variation of parameters; Linear differential Equations with non-constant coefficients; The Cauchy-Euler Equation.
Reference Books :

1. Differential Equations and Their Applications by Zafar Ahsan, published by Prentice-Hall of India Learning Pvt. Ltd. New Delhi-Second edition.
2. A text book of mathematics for BA/BSc Vol 1 by N. Krishna Murthy & others, published by S. Chand & Company, New Delhi.

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DEPARTMENT OF METHEMATICS

SYLLABUS 2018-2019

II SEMESTER

B.A./B.Sc. MATHEMATICS SYLLABUS
SEMESTER – II
PAPER – II : SOLID GEOMETRY

60 Hrs

UNIT – I (12 hrs) : The Plane :

Equation of plane in terms of its intercepts on the axis, Equations of the plane through the given points, Length of the perpendicular from a given point to a given plane, Bisectors of angles between two planes, Combined equation of two planes, Orthogonal projection on a plane.

UNIT – II (12 hrs) : The Line :

Equation of a line; Angle between a line and a plane; The condition that a given line may lie in a given plane; The condition that two given lines are coplanar; Number of arbitrary constants in the equations of straight line; Sets of conditions which determine a line; The shortest distance between two lines; The length and equations of the line of shortest distance between two straight lines; Length of the perpendicular from a given point to a given line;

UNIT – III (12 hrs) : Sphere :

Definition and equation of the sphere; Equation of the sphere through four given points; Plane sections of a sphere; Intersection of two spheres; Equation of a circle; Sphere through a given circle; Intersection of a sphere and a line; Power of a point; Tangent plane; Plane of contact; Polar plane; Pole of a Plane; Conjugate points; Conjugate planes;

UNIT – IV (12 hrs) : Sphere &Cones :

Angle of intersection of two spheres; Conditions for two spheres to be orthogonal; Radical plane; Coaxial system of spheres; Simplified from of the equation of two spheres.

Definitions of a cone; vertex; guiding curve; generators; Equation of the cone with a given vertex and guiding curve; Enveloping cone of a sphere; Equations of cones with vertex at origin are homogenous; Condition that the general equation of the second degree should represent a cone; Condition that a cone may have three mutually perpendicular generators;

UNIT – V (12 hrs) Cones & Cylinders :

Intersection of a line and a quadric cone; Tangent lines and tangent plane at a point; Condition that a plane may touch a cone; Reciprocal cones; Intersection of two cones with a common vertex; Right circular cone; Equation of the right circular cone with a given vertex; axis and semi-vertical angle.

Definition of a cylinder; Equation to the cylinder whose generators intersect a given conic and are parallel to a given line; Enveloping cylinder of a sphere; The right circular cylinder; Equation of the right circular cylinder with a given axis and radius.

Reference Books :

1. Analytical Solid Geometry by Shanti Narayan and P.K. Mittal, Published by S. Chand & Company Ltd. 7th Edition.

2. A text book of Mathematics for BA/B.Sc Vol 1, by V Krishna Murthy & Others, Published by

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DEPARTMENT OF METHEMATICS

SYLLABUS 2018-2019

III SEMESTER

B.A./B.Sc. MATHEMATICS SYLLABUS
SEMESTER – III
PAPER – III : ABSTRACT ALGEBRA

60 Hrs

UNIT – 1 : (10 Hrs) GROUPS : -

Binary Operation – Algebraic structure – semi group-monoid – Group definition and elementary properties Finite and Infinite groups – examples – order of a group. Composition tables with examples.

UNIT – 2 : (14 Hrs) SUBGROUPS : -

Complex Definition – Multiplication of two complexes Inverse of a complex-Subgroup definition – examples-criterion for a complex to be a subgroups.

Criterion for the product of two subgroups to be a subgroup-union and Intersection of subgroups.

Co-sets and Lagrange's Theorem :-

Cosets Definition – properties of Cosets–Index of a subgroups of a finite groups–Lagrange's Theorem.

UNIT –3 : (12 Hrs) NORMAL SUBGROUPS : -

Definition of normal subgroup – proper and improper normal subgroup–Hamilton group – criterion for a subgroup to be a normal subgroup – intersection of two normal subgroups – Sub group of index 2 is a normal sub group – simple group – quotient group – criteria for the existence of a quotient group.

UNIT – 4 : (10 Hrs) HOMOMORPHISM : -

Definition of homomorphism – Image of homomorphism elementary properties of homomorphism – Isomorphism – aultomorphism definitions and elementary properties–kernel of a homomorphism – fundamental theorem on Homomorphism and applications.

UNIT – 5 : (14 Hrs) PERMUTATIONS AND CYCLIC GROUPS : -

Definition of permutation – permutation multiplication – Inverse of a permutation – cyclic permutations – transposition – even and odd permutations – Cayley's theorem.

Cyclic Groups :-

Definition of cyclic group – elementary properties – classification of cyclic groups.

Reference Books :

1. Abstract Algebra, by J.B. Fraleigh, Published by Narosa Publishing house.
2. A text book of Mathematics for B.A. / B.Sc. by B.V.S.S. SARMA and others, Published by S.Chand & Company, New Delhi.
3. Modern Algebra by M.L. Khanna.

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DEPARTMENT OF METHEMATICS

SYLLABUS 2018-2019

IV SEMESTER

B.A./B.Sc. MATHEMATICS SYLLABUS

SEMESTER – IV

PAPER- IV : REAL ANALYSIS

UNIT – I (12 hrs) : REAL NUMBERS & INFINITIE SERIES :

The algebraic and order properties of R, Absolute value and Real line, Completeness property of R, Applications of supreme property; intervals. Sequences and their limits, Range and Boundedness of Sequences, Limit of a sequence and Convergent sequence.**(No. Question is to be set from this portion.)**

Introduction to series, convergence of series. Cauchy's general principle of convergence for series, tests for convergence of series, Series of Non-Negative Terms.

1. Comparison test
2. Cauchy's n^{th} root test or Root Test.
3. D'-Alemberts' Test or Ratio Test.
4. Alternating Series – Leibnitz Test.

UNIT –II (12 hrs) : CONTINUITY

Limits : Limits of functions. Limits at infinity.

Continuous functions : Continuous functions, Combinations of continuous functions, Continuous Functions on intervals, uniform continuity.

UNIT – III (12 hrs) : DIFFERENTIATION AND MEAN VALUE THEORMS :

The derivability of a function, on an interval, at a point, Derivability and continuity of a function, Graphical meaning of the Derivative, Mean value Theorems; Role's Theorem, Lagrange's Theorem, Cauchhy's Mean value Theorem

UNIT – IV (12 hrs) : RIEMANN INTEGRATION-I:

Riemann Integral, Riemann integral functions, Darboux theorem. Necessary and sufficient condition for R – integrability.Another definition of Riemann integral.Some classes of bounded integrable functions.

UNIT – V (12 hrs) : RIEMANN INTEGRATION-II:

Properties of integrable functions, Fundamental theorem of integral calculus, integral as the limit of a sum, Mean value Theorems.

Reference Books :

1. Real Analysis by Rabert & Bartely and D.R. Sherbart. Published by John Wiley.
2. A Text Book of B.Sc Mathematics by B.V.S.S. Sarma and others, Published by S. Chand & Company Pvt. Ltd., New Delhi.
3. Elements of Real Analysis as per UGC Syllabus by Shanthi Narayan and Dr. M.D. Raisinghania Published by S. Chand & Company Pvt. Ltd., New Delhi.

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DEPARTMENT OF MICROBIOLOGY

SYLLABUS 2018-2019

I SEMESTER

B.Sc MICROBIOLOGY (CBCS) SYLLABUS
FIRST YEAR – SEMESTER- I
PAPER-I : INTRODUCTION TO MICROBIOLOGY AND MICROBIAL DIVERSITY

TOTAL HOURS: 48 **CREDITS: 4**

UNIT-I No. of hours: 12
History and mile stones in microbiology. Contributions of Anton von Leeuwenhoek, Edward Jenner, Louis Pasteur, Robert Koch, Ivanowsky. Importance and applications of microbiology. Classification of microorganisms – Haeckel's three Kingdom concept, Whittaker's five kingdom concept, three domain concept of Carl Woese. Outline classification of bacteria as per the second edition of Bergey's Manual of Systematic Bacteriology.

UNIT – II No. of hours: 10
General characteristics of Bacteria, Archaea, Mycoplasmas and Cyanobacteria. Ultra structure of Prokaryotic cell- Variant components and invariant components. General characteristics of viruses. Morphology, Structure and replication of TMV and HIV.

UNIT-III No. of hours: 10
General characteristics and outline classification of Fungi, Algae and Protozoa. Principles of microscopy - Bright field and Electron microscopy (SEM and TEM).

UNIT-IV No. of hours: 8
Staining Techniques –Simple and Differential (Gram Staining and Spore Staining). Sterilization and disinfection techniques - Physical methods – autoclave, hot- air oven, pressure cooker, laminar air flow, filter sterilization, Radiation methods – UV rays, Gamma rays. Chemical methods – alcohols, aldehydes, fumigants, phenols, halogens and hypochlorites.

UNIT –V No. of hours: 8
Isolation of Microorganisms from natural habitats. Pure culture techiques – dilution-plating, Streak-plate, Spread-plate, Pour-Plate and micromanipulator. Enrichment culturing. Preservation of microbial cultures – subculturing, overlaying cultures with mineral oils, lyophilization, sand cultures, storage at low temperature.

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DEPARTMENT OF MICROBIOLOGY

SYLLABUS 2018-2019

II SEMESTER

B.Sc MICROBIOLOGY (CBCS) SYLLABUS
FIRST YEAR – SEMESTER- II
PAPER-II : MICROBIAL BIOCHEMISTRY & METABOLISM

TOTAL HOURS: 48 **CREDITS: 4**

UNIT-I No. of hours: 10
Outline classification and general characteristics of carbohydrates (monosaccharides, disaccharides and polysaccharides). General characteristics of amino acids and proteins. Structure of nitrogenous bases, nucleotides, nucleic acids. Fatty acids (saturated and unsaturated) lipids (spingolipds, sterols and phospholipids).

UNIT-II No. of hours: 8
Principle and applications of – Colorimerty Chromatography (paper, thin-layer and column), Spectrophotometry (UV & visible), Centrifugation and Gel Electrophoresis.

UNIT-III No. of hours: 10
Properties and classification of Enzymes. Biocatalysis- induced fit and lock and key models. Coenzymes and Cofactors. Factors affecting catalytic activity. Inhibition of enzyme activity- competitive, noncompetitive, uncompetitive and allosteric.

UNIT-IV No. of hours: 10
Microbial Nutrition –Nutritional requirements and uptake of nutrients by cells. Nutritional groups of microcroorganisms- autotrophs, heterotrophs, mixotrophs. Growth media- synthetic, complex, selective, enrichment and differential media. Microbial Growth- different phases of growth in batch cultures, Synchronous, continuous, biphasic growth. Factors influencing microbial growth. Methods for measuring microbial growth – Direct microscopy, viable count estimates, turbiodometry and biomass.

UNIT-V No. of hours: 10
Aerobic respiration -Glycolysis, HMP path way, ED path way, TCA cycle, Electron transport, oxidative and substrate level phosphorylation. Anaerobic respiration (Nitrate). Fermentation - Alcohol and lactic acid fermentations. Outlines of oxygenic and anoxygenic photosynthesis in bacteria.

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DEPARTMENT OF MICROBIOLOGY

SYLLABUS 2018-2019

III SEMESTER

B.Sc MICROBIOLOGY (CBCS) SYLLABUS
SECOND YEAR – SEMESTER- III
PAPER-III : MICROBIAL GENETICS AND MOLECULAR BIOLOGY

TOTAL HOURS:48 **CREDITS: 4**

UNIT-I No. of hours: 10
DNA and RNA as genetic material. Structure and organization of prokaryotic DNA. Extrachromosomal genetic elements – Plasmids and transposons. Replication of DNA – Semi conservative mechanism, Enzymes involved in replication.

UNIT-II No. of hours: 10
Mutations – spontaneous and induced, base pair changes, frame shifts, deletions, inversions, tandem duplications, insertions. Mutagens - Physical and Chemical mutagens. Outlines of DNA damage and repair mechanisms. Genetic recombination in bacteria – Conjugation, Transformation and Transduction.

UNIT-III No. of hours: 10
Concept of gene – Muton, Recon and Cistron. One gene one enzyme and one gene one polypeptide hypotheses. Types of RNA and their functions. Genetic code. Structure of ribosomes.

UNIT-IV No. of hours: 8
Types of genes – structural, constitutive, regulatory Protein synthesis – Transcription and translation. Regulation of gene expression in bacteria – *lac* operon.

UNIT-V No. of hours: 10
Basic principles of genetic engineering. Restriction endonucleases, DNA polymerases and ligases. Vectors. Outlines of gene cloning methods. Polymerase chain reaction. Genomic and cDNA libraries. General account on application of genetic engineering in industry, agriculture and medicine.

DEPARTMENT OF MICROBIOLOGY

SYLLABUS 2018-2019

IV SEMESTER

B.Sc MICROBIOLOGY (CBCS) SYLLABUS
SECOND YEAR – SEMESTER- IV
PAPER- IV: IMMUNOLOGY AND MEDICAL MICROBIOLOGY

TOTAL HOURS: 48 **CREDITS: 4**

UNIT-I No. of hours: 10
Types of immunity – innate and acquired; active and passive; humoral and cell-mediated immunity. Primary and secondary organs of immune system – thymus, bursa fabricus, bone marrow, spleen and lymph nodes. Cells of immune system. Identiification and function of B and T lymphocytes, null cells, monocytes, macrophages, neutrophils, basophils and eosinophils.

UNIT-II No. of hours: 10
Antigens – types, chemical nature, antigenic determinants, haptens. Factors affecting antigenicity. Antibodies – basic structure, types, properties and functions of immunoglobulins. Types of antigen-antibody reactions - Agglutinations, Precipitation, Neutralization, complement fixation, blood groups. Labeled antibody based techniques – ELISA, RIA and Immunofluroscence. Polyclonal and monoclonal antibodies – production and applications. Concept of hypersensitivity and Autoimmunity.

UNIT-III No. of hours: 10
Normal flora of human body. Host pathogen interactions: infection, invasion, pathogen, pathogenicity, virulence and opportunistic infection. General account on nosocomial infection. General principles of diagnostic microbiology- collection, transport and processing of clinical samples. General methods of laboratory diagnosis - cultural, biochemical, serological and molecular methods.

UNIT-IV No. of hours: 8
Antibacterial Agents- Penicillin, Streptomycin and Tetracycline. Antifungal agents – Amphotericin B, Griseofulvin Antiviral substances - Amantadine and Acyclovir Tests for antimicrobial susceptibility. Brief account on antibiotic resistance in bacteria - Methicillin-resistant Staphylococcus aureus (MRSA). Vaccines – Natural and recombinant.

UNIT-V No. of hours: 10
General account on microbial diseases – causal organism, pathogenesis, epidemiology, diagnosis, prevention and control Bacterial diseases – Tuberculosis and Typhoid Fungal diseases – Candidiasis. Protozoal diseases – Malaria. Viral Diseases - Hepatitis- A and AIDS

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DEPARTMENT OF PHYSICS

SYLLABUS 2018-2019

I SEMESTER

B.Sc. 1st Semester Physics
Paper I: Mechanics& Properties of Matter

Work load:60 hrs per semester **4 hrs/week**

UNIT-I (10 hrs)

1. Vector Analysis

Scalar and vector fields, gradient of a scalar field and its physical significance. Divergence and curl of a vector field with derivations and physical interpretation. Vector integration (line, surface and volume), Statement and proof of Gauss and Stokes theorems.

UNIT-II (10 hrs)

2. Mechanics of particles

Laws of motion, motion of variable mass system, Equation of motion of a rocket. Conservation of energy and momentum, Collisions in two and three dimensions, Concept of impact parameter, scattering cross-section, Rutherford scattering-derivation.

UNIT-III (16 hrs)

3. Mechanics of Rigid bodies

Definition of rigid body, rotational kinematic relations, equation of motion for a rotating body, angular momentum, Euler equations and its applications, precession of a top, Gyroscope, precession of the equinoxes.

4. Mechanics of continuous media

Elastic constants of isotropic solids and their relations, Poisson's ratio and expression for Poisson's ratio in terms of y, n and k. Classification of beams, types of bending, point load, distributed load.

UNIT-IV (12hrs)

5. Central forces

Central forces, definition and examples, characteristics of central forces, conservative nature of central forces, conservative force as a negative gradient of potential energy, equation of motion under a central force, Derivation of Kepler's laws. Motion of satellites.

UNIT-V (12 hrs)

6. Special theory of relativity

Galilean relativity, absolute frames.Michelson-Morley experiment, negative result.Postulates of special theory of relativity.Lorentz transformation, time dilation, length contraction, addition of velocities, mass-energy relation.

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DEPARTMENT OF PHYSICS

SYLLABUS 2018-2019

II SEMESTER

Paper II: Waves & Oscillations
(For Maths Combinations)
II SEMESTER

Work load: 60 hrs per semester **4 hrs/week**

UNIT-I (12 hrs)

1. Simple Harmonic oscillations

Simple harmonic oscillator and solution of the differential equation-Physical characteristics of SHM, torsion pendulum-measurements of rigidity modulus, compound pendulum- measurement of 'g', combination of two mutually perpendicular simple harmonic vibrations of same frequency and different frequencies. Lissajous figures.

UNIT-II (12 hrs)

2. Damped and forced oscillations

Damped harmonic oscillator, solution of the differential equation of motion of damped oscillator, logarithmic decrement, relaxation time and quality factor, differential equation of motion of forced oscillator and its solution, amplitude resonance and velocity resonance.

UNIT-III (10 hrs)

3. Complex vibrations

Fourier theorem and evaluation of the Fourier coefficients, analysis of periodic wave functions-square wave, triangular wave, saw tooth wave, simple problems on evolution of Fourier coefficients.

UNIT-IV (17hrs)

4. Vibrating strings: 8 hrs

Transverse wave propagation along a stretched string, general solution of wave equation and its significance, modes of vibration of stretched string clamped at ends, overtones and harmonics.

5. Vibrations of bars: 9 hrs

Longitudinal vibrations in bars-wave equation and its general solution. Special cases (i) bar fixed at both ends (ii) bar fixed at the midpoint (iii) bar fixed at one end. Tuning fork.

UNIT-V (9 hrs)

6. Ultrasonics:

Ultrasonics, properties of ultrasonic waves, production of ultrasonics by piezoelectric and magnetostriction methods, detection of ultrasonics, determination of wavelength of ultrasonic waves.Applications of ultrasonic waves.

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DEPARTMENT OF PHYSICS

SYLLABUS 2018-2019

III SEMESTER

Paper III: Wave Optics
(For Maths Combinations)
III SEMESTER

Work load:60 hrs per semester **4 hrs/week**

UNIT-I (8 hrs)

1. Aberrations:

Introduction – monochromatic aberrations - spherical aberration, coma, astigmatism, curvature of field and distortion- explanation and methods of elimination, Chromatic aberration - the achromatic doublet. Achromatism for two lenses (i)in contact and (ii) separated by a distance.

UNIT-II (14hrs)

2. Interference

Principle of superposition, coherence, conditions for interference of light. Fresnel's biprism-determination of wavelength of light, change of phase on reflection. Oblique incidence of a plane wave on a thin film due to reflected light (cosine law), colors of thin films, Interference by a film with two non-parallel reflecting surfaces (Wedge shaped film) - Determination of diameter of wire, Newton's rings in reflected light. Michelson interferometer - Determination of wavelength of monochromatic light using Newton's rings and Michelson Interferometer.

UNIT-III (14hrs)

3. Diffraction

Introduction,distinction between Fresnel and Fraunhoffer diffraction, Fraunhoffer diffraction –Diffraction due to (i) single slit, (ii) double slit and (iii) N slits (diffraction grating), Resolving power of grating, Determination of wavelength of light in normal incidence and minimum deviation methods using diffraction grating,

Fresnel's half period zones - area of the half period zones, zone plate – construction and theory, comparison of zone plate with convex lens - difference between interference and diffraction.

UNIT-IV(10 hrs)

4.Polarisation:

Polarized light: methods of polarization polarization by reflection, refraction, double refraction, scattering of light, Brewster's law, Malus law, Nicol prism - polarizer and analyzer, Quarter wave plate, Half wave plate, optical activity- determination of specific rotation by Laurent's half shade polarimeter, Babinet's compensator.

UNIT-V (14hrs)

5. Lasers :

Lasers: introduction, spontaneous emission, stimulated emission. Population inversion, Laser principle, Einstein coefficients, Types of lasers - He-Ne laser and Ruby laser, Applications of lasers.

6. Fiber Optics

Introduction- different types of fibers, rays and modes in an optical fiber, fiber material, principles of fiber communication (qualitative treatment only), advantages of fiber optic communication.

DEPARTMENT OF PHYSICS

SYLLABUS 2018-2019

IV SEMESTER

Paper IV: Thermodynamics &Radiation Physics
(For Maths Combinations)
IV SEMESTER

Work load: 60 hrs per semester **4 hrs/week**

UNIT-I (10 hrs)

1. Kinetic theory of gases

Introduction, Deduction of Maxwell's law of distribution of molecular speeds, experimental verification. Transport phenomena - Viscosity of gases - thermal conductivity and diffusion of gases.

UNIT-II(12 hrs)

2. Thermodynamics

Introduction, Isothermal and adiabatic processes, Reversible and irreversible processes, Carnnot's engine and its efficiency, Carnot's theorem, Second law of thermodynamics - Kelvin's and Claussius statements, Entropy - physical significance – Change in entropy in reversible and irreversible processes, Entropy of Universe, Temperature-Entropy (T-S) diagram and its uses - Change of entropy of a perfect gas.

UNIT-III(12 hrs)

3. Thermodynamic potentials and Maxwell's equations

Thermodynamic potentials, Derivation of Maxwell's thermodynamic relations, Clausius-Clayperon's equation, Derivation for ratio of specific heats, Derivation for difference of two specific heats for perfect gas, Joule Kelvin effect - expression for Joule Kelvin coefficient for perfect and Vander waal's gas.

UNIT-IV(12 hrs)

4. Low temperature Physics

Introduction, Joule Kelvin effect - Porous plug experiment, Joule expansion, Distinction between adiabatic and Joule Thomson expansion, Expression for Joule Thomson cooling, Liquefaction of helium, Kapitza's method, Adiabatic demagnetization- Production of low temperatures, applications of substances at low temperature.

UNIT-V(14 hrs)

5. Quantum theory of radiation

Blackbody-Ferry's black body, distribution of energy in the spectrum of black body, Wein's law, Rayleigh-Jean's law, Quantum theory of radiation- Planck's law, Types of pyrometers- Disappearing filament optical pyrometer - experimental determination, Angstrom pyroheliometer - determination of solar constant, Temperature of Sun.

REFERENCE BOOKS:

1. BSc Physics, Vol.2, Telugu Akademy, Hyderabad
2. Thermodynamics, R.C.Srivastava, S.K.Saha& Abhay K.Jain, Eastern Economy Edition.
3. Unified Physics Vol.2, Optics & Thermodynamics, Jai Prakash Nath&Co.Ltd., Meerut
4. Fundamentals of Physics. Halliday/Resnick/Walker.C. Wiley India Edition 2007
5. Heat, Thermodynamics and Statistical Physics-N Brij Lal, P Subrahmanyam, PS Hemne, S.Chand& Co.,2012
6. Heat and Thermodynamics- MS Yadav, Anmol Publications Pvt. Ltd, 2000

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DEPARTMENT OFSTATISTICS

SYLLABUS 2018-2019

I SEMESTER

STATISTICS CBCS SYLLABUS

Semester – I (CBCS With Maths Combination Common to BA/BSc)

Paper - I: Descriptive Statistics and Probability

No. of Hours/week : 04 credits 3

UNIT-I

Introduction to Statistics: Concepts of Primary and Secondary data. Methods of collection and editing of primary data, Secondary data. Designing a questionnaire and a schedule. Diagrammatic and graphical representation of data. Measures of Central Tendency - Mean, Median, Mode, Geometric Mean and Harmonic Mean.

UNIT-II

Measures of dispersion: Range, Quartile Deviation, Mean Deviation and Standard Deviation. Central and Non-Central moments and their interrelationship. Sheppard's correction for moments. Skewness and kurtosis.

UNIT-III

Introduction to Probability: Basic Concepts of Probability, random experiments, trial, outcome, sample space, event, mutually exclusive and exhaustive events, equally likely and favourable outcomes. Mathematical, Statistical, axiomatic definitions of probability. Conditional Probability and independence of events,

UNIT-IV

Probability theorems: Addition and multiplication theorems of probability for 2 and for n events. Boole's inequality and Baye's theorem and problems.

UNIT-V

Random variable: Definition of random variable, discrete and continuous random variables, functions of random variable. Probability mass function. Probability density function, Distribution function and its properties. Bivariate random variable - meaning, joint, marginal and conditional Distributions, independence of random variables.

Text Books:

1. V.K.Kapoor and S.C.Gupta: Fundamentals of Mathematical Statistics, Sultan Chand & Sons, New Delhi.
2. BA/BSc I year statistics - descriptive statistics, probability distribution - Telugu Academy - Dr.M.Jaganmohan Rao,Dr.N.Srinivasa Rao, Dr.P.Tirupathi Rao, Smt.D.Vijayalakshmi

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DEPARTMENT OF STATISTICS

SYLLABUS 2018-2019

II SEMESTER

STATISTICS SYLLABUS

Semester – II (CBCS With Maths Combination Common to BA/BSc)

Paper - II :Mathematical Expectation and Probability Distributions

(Scientific calculators are allowed)

No. of Hours/week : 04 credits 3

UNIT-I

Mathematical expectation : Mathematical expectation of a random variable and function of a random variable. Moments and covariance using mathematical expectation with examples. Addition and Multiplication theorems on expectation. Definitions of M.G.F, C.G.F, P.G.F, C.F and their properties. Chebyshev and Cauchy - Schwartz inequalities.

UNIT-II

Discrete Distributions : Binomial and Poisson distributions, their definitions, first four central moments, β_1 and β_2. M.G.F, C.F, C.G.F, P.G.F, mean, variance, additive property if exists. Possion approximation to Binomial distribution.

UNIT-III

Negative Binomial, Geometric, Hyper-geometric distributions - Definitions, means, variances, M.G.F, C.F, C.G.F, P.G.F, reproductive property if exists. Binomial approximation to Hyper Geometric Distribution, Poisson approximation to Negative binomial distribution.

UNIT-IV

Continuous Distributions : Rectangular, Exponential, Gamma, Beta Distributions of first and second kind. Other properties such as mean , variance, M.G.F, C.G.F, C.F, and reproductive property if exist.

UNIT - V

Normal Distribution: Definition, Importance, Properties, M.G.F, CF, additive property, Normal distribution as a limiting case of Binomial and Poisson distribution. Cauchy Distribution definition, CF and reproductive property.

Text Books:

1. V.K.Kapoor and S.C.Gupta: Fundamentals of Mathematical Statistics, Sultan Chand & Sons, New Delhi.
2. BA/BSc I year statistics - descriptive statistics, probability distribution - Telugu Academy - Dr M.Jaganmohan Rao, Dr N.Srinivasa Rao, Dr P.Tirupathi Rao, Smt.D.Vijayalakshmi
3. K.V.S. Sarma: Statistics Made Simple: Do it yourself on PC. PHI.

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DEPARTMENT OF STATISTICS

SYLLABUS 2018-2019

III SEMESTER

STATISTICS SYLLABUS
Semester – III (CBCS With Maths Combination Common to BA/BSc)
Paper - III : Statistical Methods and Sampling Distributions

No. of Hours/week : 04 credits 3

UNIT – I

Curve fitting: Bi- variate data, Principle of least squares, fitting of degree polynomial. Fitting of straight line (), Fitting of Second degree polynomial or parabola (), Fitting of power curve () and exponential curves of type i) and ii) with problems.

UNIT – II

Correlation : Meaning, Types of Correlation, Measures of Correlation : Scatter diagram, Karl Pearson's Coefficient of Correlation, Rank Correlation Coefficient (with and without ties), Bi-variate frequency distribution, correlation coefficient for bi-variate data and simple problems. Correlation ratio, concept of multiple and partial correlation coefficients (three variables only) and properties

UNIT – III

Regression : Concept of Regression, Linear Regression: Regression lines, Regression coefficients and it's properties, Regressions lines for bi-variate data and simple problems. Correlation vs regression. concept of multiple linear regression and partial regression.

UNIT – IV

Attributes : Notations, Class, Order of class frequencies, Ultimate class frequencies, Consistency ofdata, Conditions for consistency of data for 2 and 3 attributes only , Independence of attributes , Association of attributes and its measures, Relationship between association and colligation of attributes, Contingency table: Square contingency(), Mean square contingency(2), Coefficient of mean square contingency (C), Tschuprow's coefficient of contingency (

UNIT – V

Exact Sampling distributions: Population, Sample, Parameter, statistic, Sampling distribution, Standard error. Definition and properties of Student's t- distribution, F – Distribution, - Distribution and their applications, the relationship between t and F – distribution and the relationship between F and distribution.

Text books

1. BA/BSc II year statistics - statistical methods and inference - Telugu Academy by A. Mohanrao, N.Srinivasa Rao, Dr R.Sudhakar Reddy, Dr T.C. Ravichandra Kum.
2. K.V.S. Sarma: Statistics Made Simple: Do it yourself on PC. PHI.
3. Fundamentals of Mathematics statistics: VK Kapoor and SC Guptha.

Reference Books:

4. Outlines of statistics, Vol II : Goon Guptha, M.K.Guptha, Das Guptha B.

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DEPARTMENT OF STATISTICS

SYLLABUS 2018-2019

IV SEMESTER

STATISTICS SYLLABUS
Semester – IV (CBCS With Maths Combination Common to BA/BSc)
Paper - IV: Statistical Inference
(Scientific calculators are allowed)

No. of Hours/week : 04 credits 3

UNIT-I

Theory of estimation: Estimation of a parameter, criteria of a good estimator – unbiasedness, consistency, efficiency, &sufficiency and. Statement of Neyman's factorization theorem. Estimation of parameters by the method of moments and maximum likelihood (M.L), properties of MLE's. Binomial, Poisson &Normal Population parameters estimate by MLE method. Confidence intervals of the parameters of normal population.

UNIT-II

Testing of Hypothesis: Concepts of statistical hypotheses, null and alternative hypothesis, critical region, two types of errors, level of significance and power of a test. One and two tailed tests. Neyman-Pearson's lemma. Examples in case of Binomial, Poisson, Exponential and Normal distributions.

UNIT – III

Large sample Tests: large sample test for single mean and difference of two means, confidence intervals for mean(s). Large sample test for single proportion, difference of proportions. standard deviation(s) and correlation coefficient(s).

UNIT – IV

Small Sample tests: t-test for single mean, difference of means and paired t-test. $\chi 2$-test for goodness of fit and independence of attributes. F-test for equality of variances.

UNIT – V

Non-parametric tests- their advantages and disadvantages, comparison with parametric tests. Measurement scale- nominal, ordinal, interval and ratio. One sample runs test, sign test and Wilcoxon-signed rank tests (single and paired samples). Two independent sample tests: Median test, Wilcoxon – Mann-Whitney U test, Wald Wolfowitz's runs test.

TEXT BOOKS

1. BA/BSc II year statistics - statistical methods and inference - Telugu Academy by A.Mohanrao, N.Srinivasa Rao, Dr R.Sudhakar Reddy, Dr T.C. Ravichandra Kumar.

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DEPARTMENT OF ZOOLOGY

SYLLABUS 2018-2019

I SEMESTER

ZOOLOGY SYLLABUS FOR I SEMESTER

ZOOLOGY - PAPER - I

ANIMAL DIVERSITY - NONCHORDATES

Periods:60 Max. Marks:100

Brief history, Significance of Diversity of Non Chordates

Protozoa
- General characters
- Classification of Protozoa up to classes with examples
- Elphidium (type study)

Porifera
- General characters
- Classification of Porifera up to classes with examples
- Sycon – External Characters, Types of cells,
- Skelton in Sponges
- Canal system in sponges

Unit - II

Coelenterata
- General characters
- Classification of Coelenterata up to classes with examples
- Obelia - External Characters, Structure of Polyp and Medusa
- Polymorphism in coelenterates
- Corals and coral reef formation

Platyhelminthes
- General characters
- Classification of Platyhelminthes upto classes with examples
- Fasciola hepatica, Reproductive System, Life History and pathogenicity

Unit - III

Nemathelminthes
- General characters
- Classification of Nemathelminthes up to classes with examples

Annelida
- General characters
- Classification of Annelida up to classes with examples

Unit - III

Nemathelminthes

- General characters
- Classification of Nemathelminthes up to classes with examples

Annelida

- General characters
- Classification of Annelida up to classes with examples
- Hirudinaria granulosa, Digestive System, Reproductive System
- Coelomoducts
- Vermiculture - Scope, significance, earthworm species, processing, Vermicompost, economic importance of vermicompost

Unit - IV

Arthropoda

- General characters
- Classification of Arthropoda up to classes with examples
- Prawn, Appendages, Respiratory system
- Peripatus - Structure and affinities

Mollusca

- General characters
- Classification of Mollusca up to classes with examples
- Pearl formation in Pelecypoda
- Torsion in gastropods

Unit - V

Echinodermata

- General characters
- Classification of Echinodermata up to classes with examples
- Water vascular system in star fish

Hemichordata

- General characters
- Classification of Hemichordata up to classes with examples
- Balanoglossus - Structure and affinities

Non-Chordata larval forms

- Amphiblastula
- Nauplius
- Bipinnaria
- Tornaria

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DEPARTMENT OF ZOOLOGY

SYLLABUS 2018-2019

II SEMESTER

ZOOLOGY SYLLABUS FOR II SEMESTER

ZOOLOGY - PAPER - II

ANIMAL DIVERSITY - CHORDATES

Periods:60 Max. Marks: 100

Unit - I

General characters of Chordata

Prochordata

Salient features of Cephalochordata

Affinities of Cephalochordata

Salient features of Urochordata

Structure and life history of Herdmania

Significance of Retrogressive metamorphosis

Unit - II

Cyclostomata

General characters of Cyclostomata

Comparision of the Petromyzon and Myxine

Pisces

General characters of Fishes

Classification of fishes up to sub - class level with examples

Scoliodon Digestive system, Heart, Brain

Migration in Fishes

Types of Scales

Dipnoi

Unit - III

3.1 Amphibia

General characters of Amphibian

Classification of Amphibia upto orders with examples.

Rana hexadactyla Digestive system, Respiratory system, Heart

Reptilia

General characters of Reptilia

Classification of Reptilia upto orders with examples

Identification of Poisonous snakes and Skull in reptiles

Unit - IV

Aves

General characters of Aves

Classification of Aves upto subclasses with examples.

Columba livia, Digestive system, Respiratory system, Heart.

Migration in Birds

Flight adaptation in birds

Unit - V

Mammalia

General characters of Mammalia

Classification of Mammalia upto sub - classes with examples

Comparision of Prototherians, Metatherians and Eutherians

Dentition in mammals

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DEPARTMENT OF ZOOLOGY

SYLLABUS 2018-2019

III SEMESTER

ZOOLOGY SYLLABUS FOR III SEMESTER

ZOOLOGY - PAPER - III

CYTOLOGY, GENETICS AND EVOLUTION

Periods:60 Max. Marks:100

Unit - I

1. Cytology - I

Definition, history, prokaryotic and eukaryotic cells, virus

Electron microscopic structure of eukaryotic cell.

Plasma membrane –Different models of plasma membrane.

Unit – II

2. Cell organelles

Structure and functions of Endoplasmic Reticulum

Structure and functions of Golgi apparatus

Structure and functions of Lysosomes

Structure and functions of Ribosomes

Structure and functions of Mitochondria

2.7. Chromatin, Chromosomes - Structure, types, functions

Unit - III

Genetics - I

Mendel's work on transmission on traits

Principles of inheritance

Incomplete dominance and codominance

Lethal alleles, Epistasis, Pleiotropy

Unit - IV

Genetics - II

Sex determination

Sex linked inheritance

Linkage and crossing over

Extra chromosomal inheritance

Human karyotyping

Unit - V

Evolution

Lamarckism, Darwinism, Hardy-Weinberg Equilibrium.
Variations, isolating mechanisms, natural selection
Speciation (Allopatric and Sympatric)
Macro evolutionary principles (Example: Darwin's finches)

DEPARTMENT OF ZOOLOGY

SYLLABUS 2018-2019

IV SEMESTER

ZOOLOGY SYLLABUS FOR IV SEMESTER

ZOOLOGY - PAPER - IV

EMBRYOLOGY, PHYSIOLOGY AND ECOLOGY

Periods:60 Max. Marks: 100

Unit - I

Developmental Biology and Embryology
- Gametogenesis
- Types of eggs

Formation and functions of Foetal membrane in chick embryo
Development, types and functions of Placenta in mammals

Unit - II

Physiology - I
- Elementary study of process of digestion
- Absorption of digested food
- Respiration - Pulmonary ventilation, transport of oxygen and carbondioxide
- Circulation - Structure and functioning of heart, Cardiac cycle
- Excretion - Structure of nephron, urine formation, counter current mechanism

Unit - III

Physiology - II
Nerve impulse transmission, origin and propagation of action potentials
Muscle contraction - Ultra structure of muscle fibre, molecular and chemical basis of muscle contraction
Endocrine glands - Structure, secretions and the functions (of hormones) of pituitary, thyroid, parathyroid, adrenal glands and pancreas
Hormonal control of reproduction in a mammal

Unit - IV

Ecology - I
- Meaning and scope of Ecology
- Nutrient cycles - Nitrogen, carbon and phosphorus
- Components of Ecosystem (Example:lake), food chains and food web, energy flow in ecosystem

energy flow in ecosystem

Unit - V

Ecology - II
- Habitat and ecological niche
- Community interactions - Mutualism, commensalism, parasitism, competition, predation

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AUTONOMOUS SYLLABUS

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2018-2019

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2018-2019

DEPARTMENT OF ENGLISH

FIRST SEMESTER

With effect from 2017 - 18 (Under CBCS Pattern)

SUB : POETRY-I

UNIT – I Background Study

Literary History – Genres – Movements – Ideas – Trends - Concepts

UNIT – 2

1) 1. Chaucer : Good Friday, Nativity, Crucifying
2) 2. John Donne : The flee, The Canonization

UNIT – 3

1) John Milton : Paradise Lost, Book IV
2) Alexander Pope : The Rape of the Lock (canto I and II)," The Happy Man"
3) Thomas Gray : Elegy Written in a Country Church Yard
4) Tennyson : Wheezes

UNIT – 4

1) William Wordsworth : The Tables turned, Tintern Abbey.
2) John Keats : Bright Star, Endymion,Ode to Nightingale
3) P.B. Shelley : To a Skylark, Ozymandias.

2018-2019

DEPARTMENT OF ENGLISH

FIRST SEMESTER

SUB : DRAMA-I:

UNIT – 1Background Study

1) **Literary History – Genres – Movements – Ideas – Trends – Concepts**

UNIT – 2

1) **Christopher Marlowe : Dr Faustus**

2) **Ben Jonson : Volpone**

UNIT – 3

1) **William Shakespeare : Julius Caesar, Romeo and Juliet, Macbeth**

UNIT – 4

1) **Sheridan : The Rivals**

2) **Oscar Wilde : The picture of Dorian Gray**

2018-2019

DEPARTMENT OF ENGLISH

FIRST SEMESTER

SUB : FICTION-I

UNIT – I Background Study

1) **Literary History – Genres – Movements – Ideas – Trends – Concepts**

UNIT – 2

1) **Daniel Defoe : Moll Flanders**

2) **Henry Fielding : Joseph Andrews**

UNIT – 3

1) **Jane Austen : Emma**

2) **George Eliot : The Mill on the Floss**

UNIT – 4

1) **Charles Dickens : A Tale of Two Cities**

2) **Thomas Hardy : Tess of the D Urbarvillas**

2018-2019

DEPARTMENT OF ENGLISH

FIRST SEMESTER

SUB : PROSE-I:

UNIT – 1 Background Study

Literary History – Genres – Movements – Ideas – Trends – Concepts

UNIT – 2

1) **Francis Bacon : Of Truth, Of Death**

2) **Joseph Addison : The Coverley Papers (Selected Essays)**

   1. **Mischief's of party spirit**
   2. **Laboure and Exercise**
   3. **Rural Manners**

UNIT – 3

1) **Charles Lamb : Dream Children, The South-Sea House**

UNIT – 4

1) **John Milton : Of Education**

2) **Bertrand Russell : Man's Peril**

2018-2019

DEPARTMENT OF ENGLISH

FIRST SEMESTER

Paper V

SUB : ENGLISH LANGUAGE

UNIT – 1

Language – Definition – features – Human Language vs. Animal

Language- Definition and Scope of Linguistics- Dimensions of Study

UNIT – 2

Origin and Growth of English Language – Influences (Latin, French, and

Indian) – Standard English – British and American English

UNIT – 3

Sounds – Speech Mechanism – Stress/ Rhythm – Intonation – Phones – Phonemes – Allophones.

UNIT – 4

Morphology – Morphs – Allomorphs – Word formation processes – Simple,

Complex and Compound Words.

2018-2019

Department of English

Non-Core Syllabus

CBSC-1: Introduction to Computers and MS-Office

Unit -1

Exploring Computers and their Uses

Types of Storage Devices

Operating System Basics

Unit -2

Word Basics

Header and Footer

Tables

Graphics

Macros

Mail Merge

Unit- 3

Excel Basics

Formatting

Introduction to Functions

Excel Charts

Unit - 4

Power Point Basics

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2018-2019

DEPARTMENT OF ENGLISH

SECOND SEMESTER

ENGLISH 201: POETRY – II

UNIT – I Background Study

Literary History – Genres – Movements – Ideas – Trends - Concepts

UNIT – 2

1. Robert Browning : My Last Duchess, The Last Ride Together

2. G.M. Hopkins : Wind Hover, Pied Beauty

UNIT – 3

3. W.B. Yeats : The Second Coming, Byzantium,
A Prayer for my daughter

4. T.S. Eliot : The Waste Land

UNIT – 4

5. W.H. Auden : The Unknown Citizen,
The Shield of Achilles

6. Ted Hughes : God's Granduer

2018-2019

DEPARTMENT OF ENGLISH

SECOND SEMESTER

ENGLISH 202: DRAMA – II

UNIT – I Background Study

Literary History – Genres – Movements – Idea – Trends – Concepts

UNIT – 2

1. G.B. Shaw : St. Joan

2. T S Eliot : The Murder in the Cathedral

UNIT – 3

3. John Osborne : Look Back in Anger

4. Harold Pinter : The Birthday Party

UNIT – 4

5. Samuel Beckett : Waiting for Godot

6. J.M. Synge : Riders to the Sea

SKR & SKR GOVT. COLLEGE FOR WOMEN, KADAPA.
(AUTONOMOUS)
Reaccredited with 'B' Grade by NAAC
Y.S.R. Kadapa District – 516001, Andhra Pradesh, India.
Affiliated to Yogi Vemana University

2018-2019

DEPARTMENT OF ENGLISH

SECOND SEMESTER

ENGLISH 203: FICTION – II

UNIT – I Background Study

Literary History – Genres – Movements – Ideas – Trends – Concepts

UNIT – 2

1. Virginia Woolf : Mrs. Dalloway

2. James Joyce : The Portrait of the Artist as a Youngman

UNIT – 3

3. D.H. Lawrence : The Rainbow

4. William Golding : Lord of the Flies

UNIT – 4

5. Graham Greene : The Power and the Glory

6. Kingsley Amis : Lucky Jim

2018-2019

DEPARTMENT OF ENGLISH

SECOND SEMESTER

ENGLISH 204: PROSE – II

UNIT – I Background Study

Literary History – Genres – Movements – Ideas – Trends – Concepts

UNIT – 2

1. Bertrand Russell : Knowledge and wisdom

2. John Ruskin : Sesame and Lilies

UNIT – 3

3. Virginia Woolf : A Room of One's own

4. George Orwell : Politics and English Language

UNIT – 4

5. Winston Churchill: Blood, Toil, Tears and Sweat

6. G.K. Chesterton: The worship of Wealthy.

2018-2019

DEPARTMENT OF ENGLISH

SECOND SEMESTER

ENGLISH 205: ENGLISH LANGUAGE TEACHING

UNIT – 1

1. **Language Acquisition and Language Learning**
2. **Problems of Teaching / Learning English as a Second Language in the Indian Context**
3. **Current Trends of Teaching English in India.**

UNIT – 2

Teaching of English Language – Theories, - Concepts- Methods – Direct, Grammar Translation – Bilingual – Audio lingual – Desuggestopedia.

UNIT – 3

Teaching poetry & Prose from Language Perspective

Teaching LSRW Skills

UNIT – 4

Materials and tools – Development of Sources for Teaching – News Papers- Advertisements – Magazines – Utility of Language lab for teaching English.

2018-2019

DEPARTMENT OF ENGLISH

THIRD SEMESTER

ENGLISH 301: INDIAN ENGLISH LITERATURE – I

UNIT – 1

Background Study

Literary History – Genres – Movements – Ideas – Trends - Concepts

UNIT – 2

1. Rajmohan's Wife : Bunkum Chandra Chatterjee

2. The Vendor of Sweets : R. K. Narayan

UNIT – 3

3. Toru Dutta : Sita, Our Casuarina Tree, the Lotus

4. Sarojini Naidu : Coromandel Fishers, Palanquin Bearers

UNIT – 4

5. Mahesh Dattani : Tara

6. Ananda Coomaraswamy : The Dance of Siva

2018-2019

DEPARTMENT OF ENGLISH

THIRD SEMESTER

ENGLISH 302: AMERICAN LITERATURE-1

UNIT – 1

Background Study

Literary History – Genres – Movements – Ideas – Trends - Concepts

UNIT – 2

1. Emerson : The American Scholar

2. H.D. Thoreau : Walden

UNIT – 3

3. Walt Whitman : Song of Myself,

When Lilacs last in the Dooryard Bloomed

4. Emily Dickinson : Because I Could not Stop for Death,

Success is Counted Sweetest

UNIT – 4

5. Mark Twain : The Adventures of Huckleberry Finn

6. Nathaniel Hawthorne : The Scarlet Letter

DEPARTMENT OF ENGLISH

2018-2019

THIRD SEMESTER

303: NEW LITERATURES IN ENGLISH-I (Excluding Indian English Literature)

UNIT – 1 Background Study

Literary History – Genres – Movements – Ideas – Trends – Concepts

UNIT - 2

1. A.D. Hope : Australia, The Death of the Bird

2. Judith Wright : Fire at the Murdering Hut, Bullock

UNIT -3

3. Gabriel Okra : The Mystic Drum

4. Wole Soyinka : The Lion and the Jewel

UNIT – 4

5. Chinua Achebe : Things Fall Apart

6. V.S. Naipaul : A House for Mr. Biswas

DEPARTMENT OF ENGLISH

THIRD SEMESTER

2018-2019

ENGLISH 304: LITERARY CRITICISM-I

UNIT – I Background Study:

Literary History – Genres – Movements – Idea – Trends – Concepts

UNIT – 2

1. Aristotle : Poetics

2. Dr. Johnson : A Preface to Shakespeare

UNIT -3

3. Coleridge : Biographia Literary, Chapter XIV

4. Matthew Arnold : A Study of Poetry

UNIT – 4

5. T.S. Eliot : Tradition and Individual Talent

6. Calanthe Brooks : Irony as a Principle of Structure

2018-2019

DEPARTMENT OF ENGLISH

THIRD SEMESTER

ENGLISH 305: WORLD CLASSICS IN ENGLISH TRANSLATION

UNIT – I Background Study:

Literary History – Genres – Movements – Idea – Trends – Concepts

UNIT – 2

1. Sophocles : Oedipus Rex

2. Kalidasa : Shakuntala

UNIT – 3

1. Kafka : The Castle

2. Homer : The Iliad (Canto I)

3. Dante : The Inferno (From the Divine Comedy)

UNIT – 4

4. Dostoevsky : Poor Folk (novella)

DEPARTMENT OF ENGLISH

FOURTH SEMESTER

ENGLISH 401: INDIAN ENGLISH LITERATURE – II

UNIT – I Background Study

Literary History – Genres – Movements – Ideas – Trends - Concepts

UNIT – 2

1. Mulk Raj Anand : Untouchable

2. Amitav Ghosh : The Shadow Lines

UNIT – 3

3. Nissim Ezekiel : (From Ten Twentieth Century Poets, OUP)

1. **Night of the Scorpion**
2. **Poet, Lover, Birdwatcher.**
3. **The Visitor**

4. A.K. Ramanujam : (From Ten Twentieth Century Poets, OUP)

1. **Looking for a cousin on a Swing.**
2. **A River**
3. **Of Mothers, Among Other Things.**

UNIT – 4

5. Sri Aurobindo : The Soul of Poetic Delight and Beauty

6. Jawaharlal Nehru : Discovery of India (some extracts)

DEPARTMENT OF ENGLISH

FOURTH SEMESTER

ENGLISH 402: AMERICAN LITERATURE – II

UNIT – I Background Study

Literary History – Genres – Movements – Ideas – Trends - Concepts

UNIT – 2

1. Robert Frost : Mending Wall, Home Burial

2. Wallace Stevens : Sunday Morning, Anecdote of a Jar

UNIT – 3

3. Eugene O'Neill : The Hairy Ape

4. Tennessee William's: A Streetcar Named Desire

UNIT – 4

5. Saul Bellow : Seize the Day

6. Alice Walker : The Color purple

DEPARTMENT OF ENGLISH

FOURTH SEMESTER

ENGLISH 403: NEW LITERATURES IN ENGLISH – II

(EXCLUDING INDIAN ENGLISH LITERATURE)

UNIT – I Background Study

Literary History – Genres – Movements – Ideas – Trends - Concepts

UNIT – 2

1. Derek Walcott : Far Cry Africa, Ruins of Great House

2. Katherine Mansfield: Bliss and other stories

UNIT – 3

3. Margaret Laurence : The Stone Angle

4. Margaret Atwood : Surfacing

UNIT – 4

5. Cyprian Ekwensi : People of the City

6. Ngugi WaThiong'o : A Grain of Wheat

2018-2019

DEPARTMENT OF ENGLISH

FOURTH SEMESTER

ENGLISH 404: LITERARY CRITICISM – II

UNIT – I Background Study

Literary History – Genres – Movements – Ideas – Trends - Concepts

UNIT – 2

1. Edmund Wilson : Marxism and Literature

2. Lionel Trilling : Freud and Literature

UNIT – 3

3. Northrop Frye : The Archetypes of Literature

4. Jacques Derrida : Sign, Structure and Play

UNIT – 4

5. Elaine Showalter : Towards Feminist Poetics

6. Ananda Vardhan : Dhvanyaloka (Essay: The First Flash)
Translated by K. Krishna Moorthy

DEPARTMENT OF ENGLISH

FOURTH SEMESTER

2018-2019

ENGLISH 405: INDIAN LITERATURE IN ENGLISH TRANSLATION – II

UNIT – I Background Study

Literary History – Genres – Movements – Ideas – Trends - Concepts

UNIT – 2

1. Rabindranath Tagore : Geetanjali (Selections)

2. B. Tilak (Tr. S.S. Prabhakar) : As Ambrosia Dripped , Modernism & Poesy, Song Immortal

UNIT – 3

3. GurajadaAppa Rao : Kanyasulkam (Macmillan)

4. Vijay Tendulkar : Silence! The Court is in Session

UNIT – 4

5. Chandu Menon : Indulekha

6. U.R. Ananta Murrthy : Samskara