FACULTY OF ARTS
M.A. (ENGLISH) IV SEMESTER (CBCS) EXAMINATIONS AUG / SEPT 2023
ENGLISH LANGUAGE TEACHING: MAJOR DEVELOPMENTS IN L1 AND L2
PAPER - I

Time: 3 Hours] **[Max. Marks: 80**

SECTION - A (5 X 4 = 20 Marks)

1. Answer ALL the following questions

A. Learning Disabilities

B. The Acculturation Model

C. Social Strategies

D. Macrostrategic Framework

E. Testing Group Discussion

SECTION - B (5 X 12 = 60 Marks)
Answer ALL the following questions

2. (A) Discuss the human brain and its functions.

(OR)

(B) Bring out the aspects of first language acquisition and stages of language acquisition.

3. (A) What are the major findings in L2 Research?

(OR)

(B) Elucidate models of Second Language Acquisition.

4. (A) Explain in detail the Language Learning Strategies.

(OR)

(B) Discuss Rebecca Oxford's Classification of LLS.

5. (A) Discuss Braj Kachru and Tom McArthur models.

(OR)

(B) Define Kumaravadivelu's Concept of Post method Pedagogy with suitable examples.

6. (A) What are the major principles of designing ESP course. Explain.

(OR)

(B) Explain how to design a standard test.

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FACULTY OF SOCIAL SCIENCES
M. S. W IV SEMESTER (CBCS) EXAMINATIONS AUG/SEPT 2023
SOCIAL WELFARE ADMINISTRATION
PAPER - I

Time: 3 Hours] **[Max Marks: 80**

SECTION - A (5 X 4 = 20 Marks)

1 Answer ALL Questions

a. Social services

b. Personnel Development

c. Administration

d. Innovation

e. Consultancy

SECTION – B (5 X 12 = 60 Marks)
Answer ALL Questions

2. a) Give a detailed account of all the various models of Welfare.

OR

b) Discuss about the evolution of Social welfare Administration.

3. a) Explain the importance of social cost benefit analysis and how important it is to a NGO.

OR

b) Discuss how Recruitment and Staffing help in improving the performance of an organization.

4. a) What is the difference between Institutional and Non Institutional welfare Programs?

OR

b) Describe the Administrative structure for sponsored welfare programmes. At central, state and district levels.

5. a) Explain how important is accountability and transparency to a welfare organization.

OR

b) Discuss how innovation leads to organization development in a welfare organization.

6. a) Explain how a welfare organization implements field counselling.

OR

b) Discuss the principles and methods of supervision used by welfare organsiations.

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FACULTY OF ARTS

M.A (Urdu) IV Semester Examination (CBCS) AUG/SEPT 2023

Paper - I

پہلا پرچہ : افسانہ Afsana

[Time : 3 Hours] **Answer ALL the questions** **Max Marks : 80**

(حصہ الف)

نوٹ: تمام سوالات حل کیے جائیں۔ ہر سوال کے چار نشانات ہیں۔ ہر جواب پندرہ سطروں میں تحریر کیا جائے۔ **(5 x 4 = 20)**

1. افسانے کی صنفی خصوصیات پر روشنی ڈالیے۔
2. سجاد حیدر یلدرم کی افسانہ نگاری پر مختصر نوٹ تحریر کیجیے۔
3. ترقی پسند افسانے کی امتیازی خصوصیات واضح کیجیے۔
4. قاضی عبدالستار کے افسانے ''پیتل کا گھنٹہ'' کے مرکزی خیال کی وضاحت کیجیے۔
5. جدیدیت کے زیر اثر لکھے گئے افسانوں پر اظہار خیال کیجیے۔

(حصہ ب)

نوٹ: تمام سوالات حل کیے جائیں۔ ہر سوال کے بارہ نشانات مختص ہیں۔ ہر سوال کا جواب چار صفحات سے زیادہ نہ ہو **(5 x 12 = 60)**

6. (A) ''جدیدیت اور اردو افسانہ'' کے موضوع پر تفصیلی نوٹ تحریر کیجیے۔

یا

(B) غیاث احمد گدی کے افسانے 'پرندہ پکڑنے والی گاڑی' کی علامتی خوبی اور عصری معنویت اجاگر کیجیے۔

7. (A) قرۃ العین حیدر کے افسانے ''فوٹو گرافر'' کے ادبی محاسن پر روشنی ڈالیے۔

یا

(B) انتظار حسین کے افسانے ''زرد کتا'' میں فنی جہتوں اور اخلاقی قدروں کی ترسیل پر اظہار خیال کیجیے۔

8. (A) افسانہ ''ننھی کی نانی'' میں نانی کے کردار کا تنقیدی جائزہ لیجیے۔

یا

(B) ٹوبہ ٹیک سنگھ کے حوالے سے سعادت حسن منٹو کی افسانہ نگاری کا محاکمہ کیجیے۔

9. (A) اردو افسانہ کے ارتقا میں ''انگارے'' کے کردار پر تبصرہ کیجیے۔

یا

(B) افسانہ ''کفن'' کا ماجرا اپنے الفاظ میں لکھیے۔

10. (A) افسانے کی مقبولیت کے اسباب بیان کیجیے۔

یا

(B) افسانے کی تعریف کیجیے اور اس کے اجزائے ترکیبی پر روشنی ڈالیے۔

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FACULTY OF SOCIAL SCIENCES
M A (ECONOMICS) IV SEMESTER (CBCS) EXAMINATIONS AUG/SEPT 2023
DEVELOPMENT ECONOMICS-II
PAPER - I

Time: 3 Hrs] **[Max. Marks: 80**

SECTION – A (5 X 4 = 20 Marks)

1. **Answer ALL the questions**
   a) Industrialization
   b) Sector models
   c) The burden of aid
   d) Populist model of Tanzania
   e) Labour markets

SECTION - B (5 X 12 = 60 Marks)

Answer ALL Questions

2. A) State and explain the estimates of unemployment methods and recent trends in unemployment in India

OR

B) Discuss the concepts of poverty and income inequalities.

3. A) Explain the mahalanobis four sector model in India

OR

B) Explain nature scope and significance of planning in India

4. A) Deficit financing in developing countries briefly explain

OR

B) Inflation as a developing promotion strategy briefly comment

5. A) Explain the pattern of development Japan and China economies

OR

B) State and explain the pattern of development in developed and developing economies

6. A) Baraula fakrika Singh economic development and new technology and sustainable agriculture explain

OR

B) Analyse the recent trends in globalisation and agriculture growth

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FACULTY OF ARTS
M. A (TELUGU) IV SEMESTER (CBCS) EXAMINATIONS AUG/SEPT 2023
ఆధునిక తెలుగు సాహిత్యచరిత్ర - అధ్యయనం – II

PAPER - I

TIME: 3 HRS] **[MAX. MARKS: 80**

SECTION - A (5 X 4 = 20 మార్కులు)

1 **అన్ని ప్రశ్నలకు జవాబులు వ్రాయండి**

a కురుగంటి సీతారామయ్య

b మల్లంపల్లి సోమశేఖర శర్మ

c మాదిరాజు రంగారావు

d ఊటుకూరి లక్ష్మీకాంతమ్మ

e మైనార్టీ వాద కవిత్వం

SECTION – B (5 X 12 = 60 మార్కులు)

అన్ని ప్రశ్నలకు జవాబులు వ్రాయండి

2 A ఆంధ్ర రచయితలు రచనలో మధునాపంతుల అనుసరించిన మార్గాన్ని పరిచయం చేయండి

లేదా

B సాహిత్య చరిత్ర రచనలో కెవిఆర్ నరసింహం అనుసరించిన మార్గాన్ని వివరించండి

3 A పరిశోధకునిగా బిరుదురాజు రామరాజు చేసిన కృషిని వివరించండి

లేదా

B సాహిత్య పరిశోధనలో తిరుమల రామచంద్ర మార్గాన్ని వివరించండి

4 A భావకవులలో నాయని సుబ్బారావు విశిష్టతను చర్చించండి

లేదా

B ఆధునిక కవులలో సినారె మార్గాన్ని, ప్రత్యేకతను వివరించండి

5 A తెలుగు నవలా రచయితగా ఉన్నవ లక్ష్మీనారాయణ వేసిన మార్గాన్ని చర్చించండి

లేదా

B రావిశాస్త్రి నవలలను పరిచయం చేయండి

6 A స్త్రీవాద కవిత్వ ఆవిర్భావ నేపథ్యాన్ని వివరించండి

లేదా

B తెలుగులో గిరిజన సాహిత్య వికాస రీతిని వివరించండి

★★★★★

317/AUG23/IV-A

FACULTY OF SOCIAL SCIENCES
M. A (SOCIOLOGY) IV SEMESTER (CBCS) EXAMINATIONS AUG/SEPT 2023
SOCIOLOGY OF ENVIRONMENT AND SUSTAINABLE DEVELOPMENT
PAPER – I

Time: 3 Hours] **[Max. Marks: 80**

SECTION – A (5 X 4 = 20 Marks)

1. **Answer ALL Questions**

a) Eco Sociology

b) Environmental Policy

c) Eco Feminism

d) Water Management

e) Ozone depletion

SECTION – B (5 X 12 = 60 Marks)

Answer ALL Questions

2. (a) Discuss about the Risley E. Dunlop and Frederick M. Buttel approaches of Environmental Sociology

OR

(b) Describe the concept of Environment and Society.

3. (a) Describe the interface between Technology, nature and society.

OR

(b) Elaborate Environmental laws and legislations.

4. (a) Write an essay on Women and Environment

OR

(b) Describe about Chipko and Appiko movements.

5. (a) Explain about the Sociologist view of Sustainable Development

OR

(b) Explain about participatory development in Natural Resource Management.

6. (a) Explain how Stratification impacts Environmental issues

OR

(b) Discuss the causes and consequences of Air and water Pollution

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408/410/411/425/AUG23/IV-A

FACULTY OF COMMERCE
M.COM. IV SEMESTER (CBCS) EXAMINATIONS AUG/SEPT 2023
STRATEGIC MANAGEMENT
PAPER - I

TIME: 3 HRS] **[MAX. MARKS: 80**

SECTION - A (5 X 4 = 20 Marks)

1 **Answer ALL Questions**

A What are the elements of strategic management?

B Organisation capability

C What is focus strategy?

D Structural implementation

E Operational control.

SECTION – B (5 X 12 = 60 Marks)
Answer ALL Questions

2 A Explain the need and significance of strategic management

OR

B What are the benefits of strategic management?

3 A List out factors effecting the organisational appraisal

OR

B Write brief note on the methods used for organisational appraisal

4 A Briefly explain various types of strategies.

OR

B Distinguish between leadership strategy and Differentiation strategy.

5 A Discuss different approaches of resource allocation in detail.

OR

B What are the new paradigms of leadership in strategy implementation?

6 A Explain the nature and importance strategic evaluation.

OR

B Explain the evaluation techniques for operational control.

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FACULTY OF SCIENCE
M Sc (BOTANY) IV SEMESTER (CBCS R-19) EXAMINATIONS, AUG/SEPT 2023
BIODIVERSITY AND CONSERVATION
PAPER - I

TIME: 3 HRS] **[MAX. MARKS: 80**

SECTION - A (4 X 5 = 20 Marks)

1 **Answer ALL the questions**

a Key stone taxa

b Ecological Extinctions

c Red Data

d *In situ* conservation

SECTION - B (4 X 15 = 60 Marks)
Answer ALL questions

2 A Describe the different levels of biodiversity in detail

OR

B Explain the concept, origin and development of biodiversity

3 A Write a detailed account on the botanical regions and hot spots in India

OR

B Discuss on the diversification of species in detail

4 A Explain the different units of inventories in biodiversity

OR

B Discuss on the different applications of biotechnology for utilization of biodiversity

5 A Write a detailed account on oils, drugs and rubber for their economic value and utility in biodiversity

OR

B Give an account on the origin of cultivated plants

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FACULTY OF SCIENCE
M Sc (COMPUTER SCI.) IV SEMESTER (CBCS R-19) EXAMINATIONS AUG/SEPT 2023
AUTOMATA THEORY
PAPER - I

TIME: 3 HRS] **[MAX. MARKS: 80**

SECTION - A (4 X 5 = 20 Marks)

1 **Answer ALL the questions**

a Explain about Finite State Systems.

b List out Identity Rules.

c Explain about PDA.

d Explain briefly about NP problem.

SECTION - B (4 X 15 = 60 Marks)
Answer ALL questions

2 A i. Explain about Finite Automation Model.
ii. Explain about Transition Diagrams and Transition Tables.

OR

B What is Finite Automata with ε-moves? Explain Two-way Finite Automata.

3 A Explain the steps involved in conversion of Finite Automata to Regular Expression with an example.

OR

B Explain in detail the Equivalence between Regular Linear Grammar and Finite Automata.

4 A Write a detailed note on Pumping Lemma for Context Free Languages and its Applications.

OR

B Explain about Acceptance by Final State and Acceptance by Empty State and its Equivalence.

5 A Explain in detail the Definition, Model and Design of a Turing Machine.

OR

B Write a detailed note on Chomsky Hierarchy of Languages.

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612/AUG23/IV-A

FACULTY OF SCIENCE

M Sc (FOOD SCI & TECH.) IV SEM (CBCS R-19 NEW) EXAMINATIONS AUG/SEPT 2023

ADVANCES IN FOOD PACKAGING

PAPER - I

TIME: 3 HRS] **[MAX. MARKS: 80**

SECTION - A (4 X 5 = 20 Marks)

1 **Answer ALL the questions**

a Explain the packaging requirements.

b What is active packaging?

c Write about nutritional labelling.

d List the applications of modified atmosphere packaging.

SECTION – B (4 X 15 = 60 Marks)

Answer ALL questions

2 A Discuss the criteria for selection of packaging materials.

OR

B Briefly describe the different packaging systems for foods.

3 A Discuss in detail about non migratory bioactive polymers in food packaging.

OR

B Briefly describe the different types of inherently bioactive synthetic polymers with their applications.

4 A Explain aseptic filling of foods.

OR

B Briefly explain the metering and filling of different foods.

5 A Discuss in detail controlled atmosphere packaging.

OR

B Give a brief account on developing novel biodegradable materials for packaging of foods.

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FACULTY OF SCIENCE
M Sc. (MICROBIOLOGY) IV SEMESTER (CBCS R-19) EXAMINATIONS AUG/SEPT 2023
CELL AND MOLECULAR BIOTECHNOLOGY
PAPER – I

TIME: 3 HRS] **[MAX. MARKS: 80**

SECTION - A (4 X 5 = 20 Marks)

1 **Answer ALL the questions**

a Protein Kinases.

b Polymerase Chain Reaction.

c DNA finger printing.

d NCBI.

SECTION - B (4 X 15 = 60 Marks)
Answer ALL questions

2 A Write brief account on (i) Programmed Cell Death & (ii) Secondary messengers-cAMP & cGMP.

OR

B Write an essay on Protein folding and the roles of molecular chaperons.

3 A Describe the methods for Genomic & c DNA library construction & screening.

OR

B Explain cloning in *E.coli, Bacillus subtilis* & *Yeast*.

4 A Describe RNAi and Gene silencing technology and add notes on their applications.

OR

B Give an account on (i) Biochips &, (ii) DNA markers.

5 A Write an essay on introduction & scope of Bioinformatics and Molecular databases.

OR

B Write brief account on (i) Gene annotation & Gene Prediction, (ii) Structural based drug design and Ligand based drug design.

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526/AUG23/IV-A

FACULTY OF SCIENCE
M. Sc. (ZOOLOGY) IV SEMESTER (CBCS R-19) EXAMINATIONS AUG/SEPT 2023
CELL BIOLOGY
PAPER - I

TIME: 3 HRS] **[MAX. MARKS: 80**

SECTION - A (4 X 5 = 20 Marks)

1 **Answer ALL the questions**

a Fluid mosaic membrane model

b Types of Endoplasmic reticulum

c Cell surface receptors.

d Pathway of Apoptosis

SECTION - B (4 X 15 = 60 Marks)
Answer ALL questions

2 A Define cell theory. Explain the evolution of Eukaryotic cell with illustrations.

OR

B Explain about the carrier and channel proteins of membrane in detail.

3 A Describe the structure and important functions of Mitochondria.

OR

B Write the difference of Secretory and Lysosomal enzymes of Golgi complex.

4 A Explain in detail about the various types of Cell Junctions.

OR

B Give an account on Cytoskeleton components and their dynamics.

5 A What are Cyclins. Write a note on role of Rb and p53 as check points in cell cycle.

OR

B Discuss the types and stages of Cancer in detail

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CBCS R-20 NEW **505/AUG23/IV-A (R-20)**

FACULTY OF SCIENCE

M.Sc. (MATHEMATICS) IV SEM (CBCS R-20 NEW) EXAMINATIONS, AUG/SEPT 2023

ADVANCED COMPLEX ANALYSIS

PAPER - I

TIME: 3 HRS] **[MAX.MARKS: 100**

SECTION - A (8 X 5 = 40 Marks)

1 **Answer ALL the questions.**

a Prove or disprove that the radius of convergence of $\sum_{n=1}^{\infty}\frac{(-1)^n}{n(n+1)}z^{n(n+1)}$ is 1.

b Show that a limit of a convergence sequence of complex numbers is unique by appealing to the corresponding result for a sequence of real numbers.

c Define singular point of a complex function. Find the singular point(s) of $f(z)=\frac{1+e^z}{\sin z+z\cos z}$.

d Determine all zeros of $e^{z^2}-1=0$, if any.

e What is meant by indented paths? Explain it.

f Evaluate $\int_C \frac{f'(z)}{f(z)}dz$, where c is a simple closed curve and $f(z)=z^5-3iz^2+2z-1+i$.

g What is meant by linear transformations? Discuss it.

h Define linear fractional transformation. Write various forms of it.

SECTION-B (4 X 15 = 60 Marks)

Answer ALL the questions.

2 A (a) State and prove the Taylor's theorem.

(b) Compute the Maclaurin series representation: $z\cosh\left(z^2\right)=\sum_{n=0}^{\infty}\frac{z^{4n+1}}{(2n)!}$, $|z|<\infty$.

[7+8=15 Marks]

OR

B Obtain all possible Laurent series expansions in powers of z for the function $f(z)=\frac{1}{z\left(1+z^2\right)}$ and specify the regions in which those expansions are valid.

3 A (a) Define residue at a finite point.

(b) Find the residue of $f(z)=\frac{z^3}{(z^2-1)}$ as $z\to\infty$.

(c) Calculate the order of the pole at $z=0$ for $f(z)=\frac{z}{\left(\sin z-z+z^3/3!\right)^2}$ and hence find the residue at this pole. [3+4+8 = 15 Marks]

OR

B (a) State and prove Cauchy residue theorem.

(b) Evaluate $\int_C \frac{\cos\left(\pi z^2\right)+\sin\left(\pi z^2\right)}{(z-1)(z-2)}dz$, where c is $|z|=3$. [8+7=15 Marks]

(Contd.....)

4 A Using the contour integration, compute $\int_0^{\pi} \frac{\cos 2\theta}{1-2a\cos\theta+a^2}\,d\theta$, where $-1<a<1$.

OR

B (a) State and prove Rouche's theorem.

(b) Determine the number roots of $z^7-4z^3+z-1=0$ inside the circle $|z|=1$.

[8+7=15 Marks]

5 A (a) Discuss about the transformation $w=\frac{1}{z}$ in detail.

(b) Find the image of the region $x>1,\ y>0$ under the transformation $w=\frac{1}{z}$.

[8+7=15 Marks]

OR

B Determine the linear fractional transformation that sends the points $z=0,-i,2i$ into the points $w=5i,\infty,-i/3$ respectively.

Hence find (i) the invariant and fixed points of this transformation, and (ii) the image of $|z|<1$ under this transformation.

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FACULTY OF SCIENCE

M. Sc (PHYSICS & ENGG.PHYS. AND INSTR.) IV SEM (CBCS) EXAMINATIONS AUG/SEPT 2023

ELECTROMAGNETIC THEORY AND OPTICS

PAPER - I

Time: 3 Hours] **[Max. Marks: 80**

SECTION – A (4 X 5 = 20 Marks)

1. **Answer the following**
   a) What are gauge transformations?
   b) Discuss Newton's third law in electrodynamics.
   c) Obtain wave equations in vacuum and conducting media.
   d) What is optical parametric oscillation (OPO)?

SECTION – A (4 X 15 = 60 Marks)

Answer ALL Questions

2. a) Boundary conditions on fields in dielectric.
   b) Derive expression for an energy of point charge and continuous charge distribution.

OR

   c) What are merits and de-merits of Coulomb gauge and Lorentz gauge?
   d) Obtain retarded potentials for point charge in motion.

3. a) Discuss the continuity equation for conservation of charge and conservation of energy.

OR

   b) Derive the expression for Maxwell's stress tensor and the conservation of momentum.

4. a) Obtain the coefficient of Reflection and Transmittance at oblique incidence of EM waves and discuss the Brewster angle in this context.

OR

   b) Obtain the expression for power radiated by Magnetic dipole.

5. a) What is phase matching discus it by considering coupled wave equation.

OR

   b) What is multi quantum photoelectric effect?
   c) Discuss Doppler free two photon spectroscopy.

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FACULTY OF SCIENCE

M. Sc. (STATISTICS) IV SEMESTER (CBCS R-19) EXAMINATIONS AUG/SEPT 2023

STOCHATIC PROCESS

PAPER – I

TIME: 3 HRS] **[MAX. MARKS: 80**

SECTION-A (4 X 5 =20 Marks)

1 **Answer ALL the questions**

a Explain classification of Stochastic Processes.

b Write a brief note on Ergodic State and Ergodic chain.

c State the special cases of Birth and Death process.

d Define Key renewal theorem. State its uses..

SECTION-B(4 X 15 =60 Marks)

Answer ALL questions

2 A i) State and Prove the First Entrance theorem. Discuss its importance

ii) State and Prove the Chapman-Kolmogorov identity. Give its importance

OR

B i) Show that if state **i** is recurrent, state **j** is also recurrent and both **i** and **j** have same period.

ii)If two states **i** and **j** are communicative then show that both are recurrent and will have same period

3 A i) Existence and evaluation of stationary distribution.

ii) Random walk and gambler's ruin problem.

OR

B Explain the Weiner process as limit of walk.

4 A Explain Kolmogorov difference - differential equationsfor pure birth and pure death process

OR

B Explain in detail ail the Birth and Death process.

5 A State and prove fundamental theorem of branching process.
Explain the probability of ultimate extinction of a branching process.

OR

B State andprove elementary renewal theorem. Write its applications.

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FACULTY OF SCIENCE
M. Sc. (CHEMISTRY) IV SEMESTER (CBCS) EXAMINATIONS AUG/SEPT 2023
INORGANIC BIOCHEMISTRY - IV
(INORGANIC CHEMISTRY SPECIAL)
PAPER-I

Time: 3 Hours] **[Max. Marks: 80**

SECTION – A (4 X 5 = 20 Marks)

1. Answer ALL Questions

a) Explain the concept of T_M in DNA.

b) Discuss the structure of deoxy form of hemerythrin.

c) Describe the mechanical aspects of carboxy peptidase.

d) Describe the structural aspects of Vitamin $B_{12.}$

SECTION – B (4 X 15 = 60 Marks)

Answer ALL Questions

2. a) Discuss outer sphere and inner sphere isomers of M-ATP complexes.

b) Explain the binding sites of nucleosides and nucleotides.

(OR)

c) Explain the factors that influence metal ion binding sites in solution

d) Discuss about metal ion interactions with nucleotides

3. a) Give the structural and spectral features of iron sulphur proteins.

b) Write a note on Transferrin and siderophores.

(OR)

c) Explain the transport of Na^+ ions and K^+ ions across the cell membranes by Na^+-K^+ATPase.

d) Compare hemerythrin and hemocyanin with haemoglobin.

4. a) Discuss the structural and mechanistic aspects of cytochrome $P_{450.}$

b) Write a detailed note on catalase.

(OR)

c) Write a detailed note on peroxidase

d) Discuss about catalytic mechanism of carbonic anhydrase.

5. a) Discuss the mechanistic aspects of Urease.

b) Write a detailed note on alcohol dehydrogenase.

(OR)

c) Explain the types of reactions catalysed by methyl cobalamin.

d) Explain the reaction mechanisms catalysed by i) Superoxide dismutase ii) Nitrogenase.

★★★★★

FACULTY OF SCIENCE
M. Sc. (CHEMISTRY) IV SEMESTER (CBCS) EXAMINATIONS AGU/SEPT 2023
DRUG DESIGN AND DRUG DISCOVERY
(ORGANIC CHEMISTRY SPECIAL)
PAPER-I

Time: 3 Hours] **[Max. Marks: 80**

SECTION – A (4 X 5 = 20 Marks)

1. **Answer ALL the Questions**
   a) Write a note on Disease, Drug Targets andBioassay
   b) Discuss the terms of Lead Modification Strategies and Bioisosterism
   c) Define the terms of Electronic Effects and Hammett Constants (σ),
   d) Outline the applications of Molecular Docking study.

SECTION – B (4 X 15 = 60 Marks)

Answer ALL the Questions

2. a) Explain the terms Drug Patents and Clinical Trials.
   b) Discuss about the Pharmacokinetics and Pharmacodynamics

(OR)

   c) Explain the Principles of Design of Agonists and Antagonists with suitable examples
   d) Explain the discovery of lead structure from natural hormones and Neurotransmitters.

3. a) Describe the Structure Activity Relationship study in Sulfa Drugs
   b) Discuss about the Simplification of the Lead and Rigidification of the Lead

(OR)

   c) Describe the Discovery of Salbutamol and Cimetidine
   d) Explain the terms of Ring Expansion and Ring Contraction

4. a) Discuss about the free Wilson approach and Cluster Significant Analysis.
   b) Write a note on Steric Effects and Taft's Constant

(OR)

   c) Describe the Non linear Relationship between Biological Activity and Hammett Constant
   d) Write a note on Hansch Analysis and Craig's Plot

5. a) Explain the Energy minimizations andModelling Ligands
   b) Write a note on Internal Coordinates and Z-matrix

(OR)

   c) Describe the Empirical force field models molecular mechanics
   d) Explain the Molecular Docking Approaches and Scoring Techniques

★★★★★

FACULTY OF SCIENCE
M.Sc. (CHEMISTRY) IV SEMESTER (CBCS) EXAMINATIONS AUG/SEPT 2023
THERMODYNAMICS, APPLIED KINETICS AND APPLIED ELECTROCHEMISTRY
(PHYSICAL CHEMISTRY SPECIAL)
PAPER - I

Time: 3 Hours] **[Max. Marks: 80**

SECTION – A (4 X 5 = 20 Marks)

1. Answer ALL the questions.

a) Obtain the relation between Canonical partition function and Molecular partition function.

b) What are Fluxes and Forces. Write linear flux-force relations.

c) Explain the parameters affecting the reactor performance.

d) Differentiate Primary and Secondary batteries with examples.

SECTION - B (4 X 15 = 60 Marks)
Answer ALL the questions.

2. a) Derive Maxwell-Boltzmann distribution law.

b) Explain basic ideas of Base-Einstein Statistics.

(OR)

c) Derive the expression for translational partition function.

d) Discuss Debye Theory applicable to solids.

3. a) Derive the equation for liquid junction potential in terms of transport numbers using Onsagar relations.

b) Explain Entropy production in Heat flow and in Material flow.

(OR)

c) Discuss the principle of minimum Entropy production.

d) Write short notes on (i) Sodium Potassium pump (ii) Seebeck and Peltier effect.

4. a) Explain general features of Batch reactors.

b) Write the design equations for a CSTR.

(OR)

c) Discuss Material and Energy balances in Plug-Flow reactions.

d) Explain Balance equations for reactor Design.

5 a) What are fuel cells? Explain H_2/O_2 Fuel Cell.

b) Explain characteristics of anodic oxide films.

(OR)

c) Write a note on Photo Voltaic Cell.

d) Write short notes on (i) Electroplating (ii) Reduction of Nitro Compounds.

★★★★★

FACULTY OF SCIENCE

M. Sc (NUTRITION AND DIETETICS) IV SEM (CBCS) EXAMS AUG/SEPT 2023

ADVANCED NUTRITION

PAPER - I

TIME:3 HRS] **[MAX.MARKS:80**

SECTION - A (4 X 5 = 20 Marks)

1 **Answer ALL the questions**

a Write about space foods.

b Explain amino acid score and digestibility coefficient.

c Write about thrifty genotype.

d Explain nutritional labelling.

SECTION - B(4 X 15 = 60 Marks)

Answer ALL questions

2 A What are extruded foods explain and discuss their advantages and disadvantages.

OR

B What are novel proteins discuss in detail along with their applications.

3 A Describe the role of animal metabolic studies in assessment of nutrient bioavailability.

OR

B Discuss the factors affecting the bioavailability of calcium.

4 A Describe in detail passive immunity.

OR

B Describe the effects of nutrients on gene expression.

5 A Give a brief account on (i)microwave oven packaging(ii)edible packaging materials.

OR

B Write short notes on (i)labelling provision under FSSAI(ii)high barrier plastic bottles.

★★★★★

FACULTY OF ARTS
M.A. (ENGLISH) IV SEMESTER (CBCS NEW) EXAMINATIONS AUG/SEPT 2023
AMERICAN LITERATURE – II
PAPER - II

TIME: 3 HRS] **[MAX. MARKS: 80**

SECTION - A (5 X 4 = 20 Marks)

1 **Answer ALL the following questions**

A What is the American Dream?

B Realism

C A bio-note on Robert Frost

D Life and works of Earnest Hemingway

E What is Alice Walker known for?

SECTION – B (5 X 12 = 60 Marks)

Answer ALL the following questions

2 A Estimate Wallace Stevens as a poet with reference to the poems prescribed for your study.

OR

B "Home Burial" is about grief and grieving, but most of all it seems to be about the breakdown and limits of communication. Discuss

3 A Write *Plot Summary* of Hemingway's "The Old Man and the Sea".

OR

B The novel, "Seize the Day" examines one day in the unhappy life of Tommy Wilhelm. Explain

4 A Explain the complexities of the marriage of a middle-aged couple; Martha and George.

OR

B *A Raisin in the Sun* deals with the matters of housing discrimination, racism and assimilation. Discuss

5 A Summarise Malamud's "The Magic Barrel".

OR

B What is the main theme of "In Search of Our Mothers' Gardens"?

6 A Summarise Asimov's "Bicentennial Man".

OR

B What is the historical and biographical context of Fitzgerald's *The Great Gatsby*?

★★★★★

FACULTY OF SOCIAL SCIENCES
M. S. W IV SEMESTER (CBCS) EXAMINATIONS AUG/SEPT 2023
SOCIAL STATISTICS
PAPER - II

Time: 3 Hours] **[Max Marks: 80**

SECTION - A (5 X 4 = 20 Marks)

1. **Write short notes on the following:**
   a) Functions of statistics
   b) EPROM
   c) Code book
   d) Standard deviation
   e) Yule's Q

SECTION - A (5 X 12 = 60 Marks)
Answer ALL Questions

2. a) Discuss about Nominal and Ratio levels of measurement.

OR

b) Explain the use of statistics in social work research.

3. a) Describe about generations of computers.

OR

b) Describe about various I/O devices.

4. a) Discuss in detail about Bivariate analysis.

OR

b) Elaborate on Multivariate analysis in detail.

5. a) What is mean deviation and explainhow it is calculated.

OR

b) From the data calculate mean, median and mode.

7 , 6 , 3, 4, 10, 12, 8, 3, 16, 3, 1

6. a) Calculate the rank coefficient of correlation from the following table .

The ranking of students in Seminar by two panel members										
Member 1	2	4	7	1	8	5	3	6	10	9
Member 2	4	3	5	1	7	9	2	10	8	6

OR

b) Elaborate on F-test and explain its applications .

★★★★★

FACULTY OF ARTS

M.A (Urdu) IV Semester Examination (CBCS) AUG/SEPT 2023

Paper - II

دوسرا پرچہ : ماس میڈیا Mass Media

[Time : 3 Hours] **Answer ALL the questions** **Max Marks : 80**

(حصہ الف)

نوٹ: تمام سوالات حل کیے جائیں۔ ہر سوال کے چار نشانات ہیں۔ ہر جواب پندرہ سطروں میں تحریر کیا جائے۔ **(5 x 4 = 20)**

1. ٹیلی ویژن کے تعلیمی پروگراموں پر مختصر نوٹ لکھیے۔
2. ڈاکیومنٹری فلم سے کیا مراد ہے؟
3. ''ریڈیو مذاکرہ'' پر اظہار خیال کیجیے۔
4. کالم کی تعریف کیجیے اور اس کے اقسام کی وضاحت کیجیے۔
5. ماس میڈیا کی افادیت واضح کیجیے۔

(حصہ ب)

نوٹ: تمام سوالات حل کیے جائیں۔ ہر سوال کے بارہ نشانات مختص ہیں۔ ہر سوال کا جواب چار صفحات سے زیادہ نہ ہو **(5 x 12 = 60)**

6. (A) ٹیلی ویژن کے آغاز و ارتقا پر روشنی ڈالیے۔

یا

(B) ٹیلی ویژن نشریات پر مفصل نوٹ تحریر کیجیے۔

7. (A) ہندوستان میں فلم سازی کی ابتدا اور اس کی ترقی کا جائزہ لیجیے۔

یا

(B) فلم کی مختلف اقسام پر جامع نوٹ تحریر کیجیے۔

8. (A) ریڈیو نشریات کی مختلف اصناف کا تعارف کرائیے۔

یا

(B) ہندوستان میں ریڈیو کی تاریخ بیان کیجیے۔

9. (A) اردو صحافت کے آغاز و ارتقا کا جائزہ لیجیے۔

یا

(B) اداریے کی تعریف کیجیے اور اخبار میں اداریہ کی اہمیت پر اظہار خیال کیجیے۔

10. (A) جدید ذرائع ابلاغ کا تعارف کرائیے۔

یا

(B) پیام رسانی کے قدیم طریقوں پر روشنی ڈالیے۔

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FACULTY OF SOCIAL SCIENCES
M A (ECONOMICS) IV SEMESTER (CBCS) EXAMINATIONS AUG/SEPT 2023
INDIAN ECONOMY
PAPER - II

Time: 3 Hrs] **[Max. Marks: 80**

SECTION – A (5 X 4 = 20 Marks)

1. **Answer ALL the questions**
   a) PQLI
   b) RRBs
   c) Disinvestment
   d) Monetary Policy
   e) Foreign Aid

SECTION - B (5 X 12 = 60 Marks)

Answer ALL Questions

2. a. Examine the process of industrialization.

OR

b. Analyze the trends in National Income in India and explain its reasons.

3. a. Briefly explain about strategies of Indian five year plans.

OR

b. Examine the role of public sector in resource mobilization.

4. a. Examine the growth and pattern of Industrialization in India.

OR

b. Analyze the need of small scale industries in India.

5. a. Write a note on Central and State financial relations.

OR

b. Analyze the various financial sector reforms in India.

6. a. Critically examine the impact of World Trade organization on Indian Economy.

OR

b. How FEMA regulate the foreign exchange market- Comment.

★★★★★.

FACULTY OF ARTS

M. A (TELUGU) IV SEMESTER (CBCS) EXAMINATIONS AUG/SEPT 2023

ఆధునిక తెలుగు కవిత్వం – II

PAPER - II

TIME: 3 HRS] **[MAX. MARKS: 80**

SECTION - A (5 X 4 = 20 మార్కులు)

1 **అన్ని ప్రశ్నలకు జవాబులు వ్రాయండి**

a భక్తి కవిత్వం

b డి. రామలింగం

c ప్రణయ కవిత్వం

d లకుమ

e సుప్రసన్న

SECTION – B (5 X 12 = 60 మార్కులు) అన్ని ప్రశ్నలకు జవాబులు వ్రాయండి

2 A సంఘ సంస్కరణ కవితా లక్షణాలను వివరించండి

లేదా

B అతినవ్య కవితా ధోరణులను పరిచయం చేయండి

3 A విప్లవ కవిత్వం సాహిత్య విమర్శ వ్యాసంలోని అంశాలను చర్చించండి

లేదా

B ఆధునిక కవిత్వం దేశీయత వ్యాసంలోని అంశాలను వివరించండి

4 A గిరికుమారుని ప్రేమ గీతాల ప్రత్యేకతను వివరించండి

లేదా

B నాయని సుబ్బారావు ఆత్మీయతను సౌభద్రుని ప్రణయ యాత్రకు అన్వయించి చర్చించండి

5 A గేయ కావ్యాలలో కర్పూర వసంత రాయలు ప్రత్యేకతను చర్చించండి

లేదా

B నా దేశం నా ప్రజలు లోని విప్లవ కవితా దృక్పథాన్ని పరిచయం చేయండి

6 A గుడిసెలు కాలిపోతున్నై లోని సామాజిక సందేశాన్ని వివరించండి

లేదా

B శతాంకుర కావ్య తాత్వికతను వివరించండి

★★★★★

FACULTY OF SOCIAL SCIENCES
M. A (SOCIOLOGY) IV SEMESTER (CBCS) EXAMINATIONS AUG/SEPT 2023
SOCIAL ANTHROPOLOGY
PAPER – II

Time: 3 Hours] **[Max. Marks: 80**

SECTION – A (5 X 4 = 20 Marks)

1. **Answer ALL Questions**

   a) Define Tribe.

   b) What is Enculturation?

   c) Define lineage.

   d) What is meant by Magic?

   e) Explain the land related issues of tribes in India.

SECTION – B (5 X 12 = 60 Marks)

Answer ALL Questions

2. (A) Explain the racial and linguistic distribution of tribes in India.

OR

(B) Discuss the relationship of Social Anthropology with other social sciences.

3. (A) Define culture and explain the characteristics of culture.

OR

(B) Discuss the theory of Tylor on culture.

4. (A) Discuss the types and characteristics of marriage in tribal community.

OR

(B) Write about the tribal kinship system.

5. (A) Discuss the characteristics of tribal religion.

OR

(B) Explain the views of James Frazer on tribal religion.

6. (A) Write about the tribal law and justice.

OR

(B) Discuss the nutrition and health problems faced by tribes in India.

★★★★★

408/410/AUG23/IV-B

FACULTY OF COMMERCE
M.COM (GEN & CA) IV SEMESTER (CBCS) EXAMINATION AUG/SEPT 2023
INTERNATIONAL BUSINESS
PAPER - II

TIME: 3 HRS] **[MAX. MARKS: 80**

SECTION - A (5 X 4 = 20 Marks)

1 **Answer ALL Questions**

A Barriers in International Business

B Legal Environment

C Objectives of World Bank

D Multinational enterprise

E Globalisation of Markets

SECTION – B (5 X 12 = 60 Marks)
Answer ALL Questions

2 A Explain the process of Internalization.

OR

B Discuss different stages in International Business

3 A What is business environment? Explain the different factors of International Business Environment

OR

B Explain the recent trends in International Business

4 A Explain in detail the objectives and functions of GATT

OR

B Explain the rationale behind government intervention in international business.

5 A Describe the organizational structure of MNCs

OR

B Write a critical note on the recent developments in MNCs

6 A Explain in detail the international financial strategies of a firm.

OR

B Briefly explain the training and development requirements in International business

★★★★★

425/AUG23/IV-B

FACULTY OF COMMERCE
M.COM (FA) IV SEMESTER (CBCS) EXAMINATION AUG/SEPT 2023
STRATEGIC COST MANAGEMENT
PAPER - II

TIME: 3 HRS] **[MAX. MARKS: 80**

SECTION - A (5 X 4 = 20 Marks)

1 **Answer ALL Questions**

A Decentralisation of cost management

B Cost reporting

C Value chain framework

D Strategic alignment

E Quality cost

SECTION – B (5 X 12 = 60 Marks)
Answer ALL Questions

2 A Explain in detail various international issues in cost management.

OR

B Write a brief note on different types of risks in currency exchange.

3 A Explain the structure of management audit

OR

B Discuss the generally accepted cost accounting principles.

4 A Explain the role of strategic positioning to create and sustain competitive advantage.

OR

B Explain the strategies of life cycle cost management.

5 A Distinguish between activity based and strategic based responsibility accounting.

OR

B What is strategic translation? Explain the methods of linking various methods to strategy.

6 A Explain the role of cost information in decision making.

OR

B Explain the techniques of controlling environmental cost.

★★★★★

FACULTY OF SCIENCE
M Sc (BOTANY) IV SEMESTER (CBCS R-19) EXAMINATIONS AUG/SEPT 2023
PLANT MOLECULAR BIOLOGY
PAPER - II

TIME: 3 HRS] **[MAX. MARKS: 80**

SECTION - A (4 X 5 = 20 Marks)

1 **Answer ALL the questions**

a Somatic embryos

b Restriction Endonucleases

c Microprojectile Gun

d Biodiesel

SECTION - B (4 X 15 = 60 Marks)
Answer ALL questions

2 A Describe the isolation and fusion of protoplasts

OR

B Discuss on the *invitro* production of secondary metabolites

3 A Explain Southern blotting with suitable examples

OR

B Describe Intellectual Property Rights and Patents

4 A Write about Human Genome Project

OR

B Write about cryopreservation and germplasm storage

5 A Discuss on the microbial production of vitamins and alcohol

OR

B Describe Polymerase Chain Reaction

★★★★★

FACULTY OF SCIENCE
M Sc (COMPUTER SCI.) IV SEMESTER (CBCS R-19) EXAMINATIONS AUG/SEPT 2023
OBJECT ORIENTED ANALYSIS AND DESIGN
PAPER - II

TIME: 3 HRS] **[MAX. MARKS: 80**

SECTION - A (4 X 5 = 20 Marks)

1 **Answer ALL the questions**

a What is an Object Model?

b Explain the Nature of a Class.

c What is SDLC?

d Explain about Inception in Traffic Management.

SECTION - B (4 X 15 = 60 Marks)

Answer ALL questions

2 A List out and explain the Five Attributes of Complex Systems.

OR

B Explain in detail the Elements of the Object Model and Applying the Object Model.

3 A i. Discuss the Interplay of Classes and Objects
ii. Explain the importance of Proper Classification.

OR

B Write a detailed note on Package Diagrams, Component Diagrams and Deployment Diagrams.

4 A Distinguish between Interaction Overview Diagrams and Composite Structure Diagrams with an example.

OR

B Explain in detail the Quality Assurance and Metrics and Benefits and Risks of Object-Oriented Development.

5 A Write a detailed note on Satellite-Based Navigation.

OR

B Explain in detail the Construction, Transition and Post-Transition of Vacation Tracking System.

★★★★★

612/AUG23/IV-B

FACULTY OF SCIENCE

M Sc (FOOD SCI & TECH) IV SEM (CBCS R-19 NEW) EXAMINATIONS AUG/SEPT 2023

FOOD PRODUCT DEVELOPMENT& ENTERPRENUERSHIP

PAPER - II

TIME: 3 HRS] **[MAX. MARKS: 80**

SECTION - A (4 X 5 = 20 Marks)

1 **Answer ALL the questions**

a List the factors for success.

b Explain product evaluation.

c Explain micro entrepreneurship.

d Explain the term product life cycle.

SECTION – B (4 X 15 = 60 Marks)

Answer ALL questions

2 A Describe in detail the process of product development programme.

OR

B Discuss the process for managing product success.

3 A Describe the knowledge required for conversion of product concept to product success.

OR

B Briefly explain product design and process development.

4 A Describe the role of entrepreneurship in economic development.

OR

B Write a note on Telangana food processing policy.

5 A Discuss briefly the marketing mix concepts 4P’s and 4C’s

OR

B Give a brief account on personal and psychological factors in relation to consumer buying behaviour.

★★★★★

518/AUG23/IV-B

FACULTY OF SCIENCE
M. Sc. (MICROBIOLOGY) IV SEM (CBCS R-19) EXAMINATIONS AUG/SEPT 2023
MEDICAL VIROLOGY & PARASITOLOGY
PAPER - II

Time: 3 Hours] **[Max. Marks: 80**

SECTION - A (4 X 5 = 20 Marks)

1. Write short notes on the following

a) Mumps
b) Zoonosis
c) HIV
d) Systemic mycosis

SECTION - B (4 X 15 = 60 Marks)
Answer ALL Questions

2. (a) Write an essay on structure, cultivation, pathogenicity, lab diagnostics, prevention of adeno virus

OR

(b) Describe the rhino viruses

3. (a) Write an essay on Hepatitis A Virus

OR

(b) Describe the Japanese encephalitis viruses

4. (a) Write an essay on smallpox viruses

OR

(b) Describe the herpes simplex virus

5. (a) Write an essay on amoebiasis

OR

(b) Describe the trichomoniasis

★★★★★

526/AUG23/IV-B

FACULTY OF SCIENCE

M.Sc. (ZOOLOGY) IV SEMESTER (CBCS)EXAMINATIONS AUG/SEPT 2023

DEVELOPMENTAL BIOLOGY

PAPER - II

Time:3 Hours] **[Max.Marks:80**

SECTION – A (5 X 4 = 20 Marks)

1 **Answer ALL the Questions**

a) Malformations and Teratology

b) Structure of Gametes

c) Tetrapod limit Development

d) HoX Genes

SECTION – B (4 X 15 = 60 Marks)

Answer ALL the questions.

2 a) Discuss determining the function of Genes during Development.

OR

b) Explain the Developmental Mechanics of Cell Specification.

3 a) Describe the Genetics of Axis Specification in Drosophila.

OR

b) Elaborate on the Early Development of snails.

4 a) Give an account of the stencil concept and write notes on blood and lymphocyte lineages.

OR

b) What is Metamorphosis? Explain about Regeneration and Aging.

5 a) Elaborate on Teratogenesis and Add a not on Teratogenic agents.

OR

b) Discuss Homologous Pathways of Development.

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CBCS R-20 NEW

FACULTY OF SCIENCE

M.Sc. (MATHEMATICS) IV SEM (CBCS R-20 NEW) EXAMINATIONS AUG/SEPT 2023

LEBESGUE MEASURE AND INTEGRATION

PAPER – II

TIME: 3 HRS] **[MAX. MARKS: 100**

SECTION - A (8 X 5 = 40 Marks)

1 **Answer ALL the questions.**

a Prove that any set of outer measure zero is measurable. In particular, any countable set is measurable.

b Show that if E_1 and E_2 are measurable, then show that

$$m(E_1 \cup E_2) + m(E_1 \cap E_2) = m(E_1) + m(E_2)$$

c Let f and g be measurable functions on E that are finite a.e. on E. Then, show that f g is measurable on E.

d Suppose a function f has a measurable domain and is continuous except at a finite number of points. Is f necessarily measurable?

e Let f be a bounded measurable function on a set of finite measure E. Then show that f is integrable over E.

f Let E have measure zero. Show that if f is a bounded function on E, then f is measurable and $\int_E f = 0$.

g State Lebesgue's theoremand Jordan's theorem.

h Define

$$f(x) = \begin{cases} x^2 \cos(1/x) & \text{if } x \neq 0, x \in [-1,1] \\ 0 & \text{if } x = 0 \end{cases}$$

Is f of bounded variation on $[-1, 1]$?

SECTION-B (4 X 15 = 60 Marks)

Answer ALL the questions.

2 A (a) The outer measure of an interval is its length.
(b) State and prove the Borel-Cantelli lemma.

OR

B Prove that Lebesgue measure possesses the following continuity properties.

(a) If $\{A_k\}_{k=1}^{\infty}$ is an ascending collection of measurable sets, then

$$m\left(\bigcup_{k=1}^{\infty} A_k\right) = \lim_{k\to\infty} m(A_k)$$

(b) If $\{\{B_k\}_{k=1}^{\infty}$ is a descending collection of measurable sets and $m(B_1) < \infty$, then

$$m\left(\bigcap_{k=1}^{\infty} B_k\right) = \lim_{k\to\infty} m(B_k)$$

3 A (a) State and prove Egorofl's theorem.
(b) Show that the conclusion of Egoroff's theorem can fail if we drop the assumption that the domain has finite measure.

OR

B (a) State and prove Losin's theorem.
(b) Prove the extension of Lusin's theorem to the case that E has infinite measure.

(Contd.....)

4 A (a) State and prove Fatou's lemma.
(b) State and prove the monotone convergence theorem.

OR

B (a) State and prove the Lebesgue dominated convergence theorem.
(b) State the general Lebesgue dominated convergence theorem

5 A State and prove the Vitali covering lemma.

OR

B (a) Define the terms total variation and bounded variation.
(b) Let the function f be absolutely continuous on the closed, bounded interval [a, b]. Then f is the difference of increasing absolutely continuous functions and, in particular, is of bounded variation.

★★★★★

FACULTY OF SCIENCE

M.SC. (ENGG. PHYSICS AND INSTR. & PHYSICS) IV SEM (CBCS) EXAMS, AUG/SEPT 2023

MOLECULAR AND RESONANCE SPECTROSCOPY

PAPER - II

Time: 3 Hours] **[Max. Marks: 80**

SECTION – A (4 X 5 = 20 Marks)

1) **Write a short note on :**
   (a) Isotope effect on rotational spectra
   (b) Frank - Condon principle
   (c) Magnetic Resonance Imaging (MRI)
   (d) Recoilless emission and absorption of gamma rays

SECTION – B (4 X 15 = 60 Marks)

Answer ALL the questions

2) (a) Describe the construction and working of Microwave spectrometer and explain what information can be obtained from rotational spectra.

(OR)

(b) Discuss in detail about the vibrational spectra of diatomic vibrating rotar

3) (a) Discuss in detail about rotational fine structure of electronic spectra.

(OR)

(b) Explain Quntum theory of Raman Effect. Discuss in detail the Rotational Raman spectra

4) (a) Explain about different relaxation process in NMR and derive Bloch equations.

(OR)

(b) Explain principle and resonance condition of ESR. Describe the instrumentation and working of ESR spectrometer.

5) (a) Explain isomer shift in Mossbauer Spectra. Discuss the Quadrupole interaction in Mossbauer spectroscopy

(OR)

(b) Explain about Quadrupole nucleus and state the principle of NQR. Describe the instrumentation of NQR Spectrometer.

★★★★★

FACULTY OF SCIENCE

M. Sc. (STATISTICS) IV SEMESTER (CBCS R-19) EXAMINATIONS AUG/SEPT 2023

TIME SERIES ANALYSIS

PAPER – II

TIME: 3 HRS] **[MAX. MARKS: 80**

SECTION - A (4 X 5 =20 Marks)

1 **Answer ALL the questions**

a Explain the forecasting techniques and its limitations.

b Define two equivalent forms of general linear process..

c Define random shock form of ARIMA model.

d Derive the confidence interval for the forecasts

SECTION - B (4 X 15 = 60 Marks)
Answer ALL questions

2 A Define Stationary process. Distinguish between process stationary in the strict and wide sense. Explain and distinguish between correlogram andperiodogram analysis.

OR

B Distinguish between time domain, time series and frequency domain time series.

3 A Define AR(2) model . Derive its variance and power spectrum.

OR

B Obtain the conditions for stationarity of an auto regressive process of order.

4 A Explain the identification process of an ARIMA model

OR

B Explain the role of correlation and partial correlation functions in the identification of time series model.

5 A Explain diagnostic checking in time series modelling. Discuss portmanteau test for checking model.

OR

B Explain the three basic forms of forecast and write their properties

★★★★★

FACULTY OF SCIENCE
M. Sc. (CHEMISTRY) IV SEMESTER (CBCS) EXAMINATION AUG/SEPT 2023
MEDICINAL INORGANIC CHEMISTRY
(INORGANIC CHEMISTRY SPECIAL)
PAPER -II

Time: 3 Hours] **[Max. Marks: 80**

SECTION – A (4 X 5 = 20 Marks)

1. Answer ALL Questions

a) Write briefly the thermodynamic and kinetic principles related to Pt (II) chemistry.

b) Explain chelation therapy using desferrioxamine.

c) Describe the Foot printing.

d) Write about the developments in Intercalation process.

SECTION – B (4 X 15 = 60 Marks)

Answer ALL Questions

2. a) Write a detailed note on Platinum complexes in cancer therapy.

b) Explain drug resistance and DNA repair mechanism.

(OR)

c) Explain *cis* and *trans* influences of Pt (II) complexes.

d) Describe the binding sites of nucleic acids and their constituents in biological systems.

3 a) Describe the single ligand and mixed ligand chelation therapy each with oneappropriateexample.

b) Explain the antitumor activity of Adriamycin.

(OR)

c) Explain ligand chelation therapy of metallothioneins and tetracyclines.

d) Discuss the Rheumatoid arthritis and the role of gold containing drugs in therapy of Rheumatoid arthritis.

4. a) What is photochemical probing? Explain the use of acridines as photochemical probes.

b) Explain the role of dimethyl sulphate in chemical probing of DNA complexes.

(OR)

c) Explain photophysics and photochemistry of Ru(II) polypyridyl complexes.

d) Describe the immobilization methods of enzymes and applications.

5 a) What is Intercalation? Explain the factors which relate intercalation and medicinal activity.

b) Explain the DNA binding with antimalarial drugs.

(OR)

c) Write a brief note on anticancer activity of metallocenes.

d) Explain the influence of alcohols and amides in drug binding to DNA.

★★★★★

503/AUG23/IV-B(E)

FACULTY OF SCIENCE

M. Sc (CHEMISTRY) IV SEMESTER (CBCS) EXAMINATIONS AUG/SEPT 2023

REACTION MECHANISM, NON BENZENOID AROMATICS AND NANOMATERIALS

(ORGANIC CHEMISTRY SPECIAL)

PAPER - II

Time: 3 Hrs] **[Max.Marks:80**

SECTION - A (4 X 5 = 20 Marks)

1. Answer the Following Questions

a. What is Click reaction? Explain.
b. Write a note on the Super Acids.
c. Explain the limitations of the Huckel's rule.
d. Discuss the top-down approach of Nanomaterials.

SECTION - B (4 X 15 = 60 Marks)
Answer ALL Questions

2 a. Describe Neber Rearrangement.
b. Explain the ring opening metathesis and its applications.

(OR)

c. Outline Mansanto Oxidation and its mechanism.
d. Explain Bergman Cyclisation.

3 a. Explain Darzen's Condensation with mechanism.
b. What is Knoevenagel Condensation? Explain.

(OR)

c. Describe the conversion of aryl imino esters to diaryl amides.
d. Explain Von-Richter rearrangement.

4 a. Write the synthesis and aromatic properties of cyclopentadienyl anion systems.
b. Write a note on alternant and non-alternant hydrocarbons.

(OR)

c. Explain the synthesis of Sydnones, and Fulvenes.
d. Explain the synthesis and aromatic properties of tropilium cation.

5 a. Write the synthesis and optoelectronic properties of various CNTs.
b. What are the different types of Carbon nanotubes? Explain

(OR)

c. Write the synthesis and optoelectronic properties of Graphene.
d. Explain OLEDs and its importance.

★★★★★

503/AUG23/IV-B(D)

FACULTY OF SCIENCE

M. Sc. (CHEMISTRY) IV SEMESTER (CBCS) EXAMINATIONS AUG/SEPT 2023

COMPUTATIONAL CHEMISTRY, MATERIAL SCIENCE AND LASERS IN CHEMISTRY

(PHYSICAL CHEMISTRY SPECIAL)

PAPER - II

Time: 3 Hours] **[Max. Marks: 80**

SECTION – A (4 X 5 = 20 Marks)

1. Answer ALL the Questions

a) Derive an expression of ionization energy of Koopman's theorem?

b) What are Corey-Pauling rules?

c) Explain particle and fiber reinforced composites with suitable examples.

d) What are the characteristics of laser light and laser pulses?

SECTION - B (4 X 15 = 60 Marks)

Answer ALL Questions

2. a) How to convert from spin orbitals to spatial orbitals in the Hartree-Fock approximation?

b) Discuss the results of HF calculations of water molecule.

OR

c) Give a detailed account on DFT theory.

d) Describe about Coloumb operator and exchange operator.

3. a) Explain briefly about different biopolymer interactions.

b) Write a note on conformational entropy and potential energy diagrams.

OR

c) Discuss the conformation energy of a-helix and b-sheet structures of a protein.

d) Describe the random linear structure of macromolecules.

4 a) Explain different techniques of single crystal growth.

b) What NLO materials? Explain organic, inorganic and polymeric NLO materials with examples.

OR

c) Describe the importance of conducting property of fullerene as superconductors.

d) Discuss any two preparative methods of solid materials.

5 a) Explain the two photon spectra of diphenyloctatetracene.

b) Describe the formation and dissociation of CO-heamoglobin complex.

OR

c) Discuss the principle of Time-Resolved spectroscopy and its applications.

d) Explain the role lasers in multiphoton spectroscopy.

★★★★★

613/AUG23/IV-B

FACULTY OF SCIENCE
M. Sc (NUTRITION & DIETETICS) IV SEM (CBCS) EXAMS, AUG/SEPT 2023
PEDIATRIC NUTRITION
PAPER - II

TIME: 3 HRS] **[MAX. MARKS: 80**

SECTION - A (4 X 5 = 20 Marks)

1 **Answer ALL the questions**

a What are the metabolic changes during critical illness among children.

b What are the adverse effects of diarrhoea?

c Write the criteria for diagnosis in juvenile diabetics.

d Write about autism subjects.

SECTION – B (4 X 15 = 60 Marks)
Answer ALL questions

2 A Describe the dietary management for PEM patients.

OR

B Describe the interaction of nutrition and infection among children.

3 A Give a brief account on pathogenesis and dietary management for children with persistent diarrhoea.

OR

B Discuss dietary management for patientssuffering from chronic renal failure.

4 A Discuss in brief exercise and hypoglycaemia.

OR

B Describe the role of nutrition for HIV infected child along with the nutritional requirements.

5 A Describe the diagnostic criteria and dietary management for patient suffering from homocysteinuria.

OR

B Discuss ketogenic diet for children suffering from epilepsy.

★★★★★

009/AUG23/IV-C

FACULTY OF ARTS
M. A. (ENGLISH) IV SEMESTER (CBCS) EXAMINATIONS AUG/SEPT 2023
INDIAN WRITING IN ENGLISH – II
PAPER - III

TIME: 3 HRS] **[MAX. MARKS: 80**

SECTION - A (5 X 4 = 20 Marks)

1 **Answer ALL the questions**

a Counter Discourse

b Write a short note on Nissim Ezekiel's *Enterprise?*

c Discuss the role of Monisha?

d What does the title *Interpreter of Maladies* means?

e Write a note on the theme of religion in Mahesh Dattani's *Final Solutions*?

SECTION - B (5 X 12 = 60 Marks)
Answer ALL questions

2 A Write an essay on Nationalism?

OR

B Write an essay on Identity Movements?

3 A Write a critical note on A. K. Ramanujan's use of irony in the poems prescribed for your study?

OR

B Write a critical appreciation of the Arun Kolatkar's poem *An Old Woman?*

4 A Consider Saleem Sinai as the protagonist of the novel *Midnight's Children?*

OR

B Write an essay on the theme of human relationships on the basis of Shakutai and Urmi's relationship in Shashi Deshpande's *The Binding Vine?*

5 A Bharati Mukherjee's *The Management of Grief* is a tragic and melancholic story which creates the impression of an optimistic note, a person who manages the grief will never be alone? Elucidate.

OR

B Discuss the narrative technique of Rohinton Mistry's *Swimming Lessons?*

6 A Illustrate the social significance of *Final Solutions* by Mahesh Dattani?

OR

B Write an essay on the main theme of Manjula Padmanabhan's *Harvest?*

★★★★★

FACULTY OF SOCIAL SCIENCES
M. S. W IV SEMESTER (CBCS) EXAMINATIONS AUG/SEPT 2023
URBAN COMMUNITY DEVELOPMENT - II
PAPER – III (A)

Time: 3 Hours] **[Max Marks: 80**

SECTION - A (4 X 5 = 20 Marks)

1. **Write short notes on the following:**
   a) Unorganized sector
   b) Urban basic services.
   c) Problems of clime change.
   d) Functions of UDA.

SECTION - A (4 X 15 = 60 Marks)
Answer ALL Questions

2. (a) What do you understand about the urban poor? Discuss the shelter and social amenities of the urban poor with reference to 3rd world countries.

OR

(b) Explain the concept of an unorganized sector and discuss the organizing present approaches for the elimination of the urban poor.

3. (a) Discuss the present environmental problems in urban areas and explain the role of the social worker in combating these problems.

OR

(b) Elaborate on the present issues in urban slum areas and explain the role of the social worker in the implication of these problems.

4. (a) What do you understand about the UDA? Trace the evolution of the Urban Development Authority.

OR

(b) Write a detailed note about the current functions and issues hampering the urban municipal administration.

5. (a) Explain the concept and scope of people's participation and its impact on urban community development.

OR

(b) Explain the concept of micro-planning origin, relevance, process, and format for micro-planning.

★★★★★

310/AUG23/IV-D(B)

FACULTY OF SOCIAL SCIENCES
M. S. W IV SEMESTER (CBCS) EXAMINATIONS AUG/SEPT 2023
PSYCHIATRIC SOCIAL WORK - II
PAPER – III (B)

Time: 3 Hours] **[Max Marks: 80**

SECTION - A (4 X 5 = 20 Marks)

1 **Write short notes on the following:**

a. Characteristics of Abnormal Behavior

b. Therapeutic relationships

c. Pedophilia

d. Depressants

SECTION - A (4 X 15 = 60 Marks)
Answer ALL Questions

2. a) Discuss the roles of a psychiatric social worker. What skills are required to do those roles?

OR

b) What are the general causes of abnormality? What is multi theory perspective for social work practice in mental health setting.

3. a) What do you mean by Anti Social Personality disorder, Border line and Narcissistic Personality?

OR

b) Give the clinical description, causes and treatment for dependent and obsessive compulsive personality disorder.

4. a) Discuss about the Causes of Sexual dysfunction and Treatment of Sexual dysfunction.

OR

b) Neuroliguistic programming model (NLP) is specific approach to treatment of mental disorders. Explain.

5. a) Give the Clinical description, causes and treatment for Substance related disorders.

OR

b) Discuss the Historical perspective and development of Cognitive behavior therapy in treating mental disorders.

★★★★★

FACULTY OF ARTS

M.A (Urdu) IV Semester Examination (CBCS) AUG/SEPT 2023

Paper - III

Urdu Adab Ki Tehreeken تیسرا پرچہ : اُردوادب کی تحریکیں

[Time : 3 Hours] **Answer ALL the questions** **Max Marks : 80**

(حصہ الف)

نوٹ: تمام سوالات حل کیے جائیں۔ ہر سوال کے چار نشانات ہیں۔ ہر جواب پندرہ سطروں میں تحریر کیا جائے۔ **(5 x 4 = 20)**

1. ایہام کی تعریف کیجیے اور مثالوں سے اس کی وضاحت کیجیے۔
2. انجمن پنجاب کے مشاعروں کی اہمیت واضح کیجیے۔
3. اردو نظم پر رومانی تحریک کے اثرات کا جائزہ لیجیے۔
4. جدیدیت کے نظریہ ادب پر روشنی ڈالیے۔
5. مابعد جدیدیت سے کیا مراد ہے؟

(حصہ ب)

نوٹ: تمام سوالات حل کیے جائیں۔ ہر سوال کے بارہ نشانات مختص ہیں۔ ہر سوال کا جواب چار صفحات سے زیادہ نہ ہو **(5 x 12 = 60)**

6. (A) اردو ادب میں ترقی پسند تحریک پر جامع نوٹ تحریر کیجیے۔

یا

(B) اردو شاعری پر ترقی پسند تحریک کے اثرات کی وضاحت کیجیے۔

7. (A) جدیدیت کے اہم افسانہ نگاروں کا تعارف کرائیے۔

یا

(B) واضح کیجیے کہ جدیدیت ترقی پسند تحریک کا رد تھی یا اس کی توسیع؟

8. (A) مابعد جدیدیت کو تحریک یا رجحان نہیں بلکہ ''صورت حال'' سے کیوں تعبیر کیا جاتا ہے؟ واضح کیجیے۔

یا

(B) اردو میں مابعد جدیدیت کے زیر اثر شعری و ادبی سرمائے کا محاسبہ کیجیے۔

9. (A) علی گڑھ تحریک کے تاریخی، سیاسی اور سماجی پس منظر پر روشنی ڈالیے۔

یا

(B) سرسید کے رفقا کی ادبی خدمات پر اظہار خیال کیجیے۔

10. (A) اردو ادب کی تاریخ میں اصلاح زبان کی کوششوں اور ردایہام گوئی کا تفصیلی جائزہ لیجیے۔

یا

(B) 'رجحان' تحریک اور دبستان کی تعریف کیجیے اور ان کے فرق کو واضح کیجیے۔

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313/AUG23/IV-C

FACULTY OF SOCIAL SCIENCES
M A (ECONOMICS) IV SEMESTER (CBCS) EXAMINATIONS AUG/SEPT 2023
ENVIRONMENTAL ECONOMICS
PAPER - III

Time: 3 Hrs] **[Max. Marks: 80**

SECTION – A (5 X 4 = 20 Marks)

1. **Answer ALL the questions**
   a) Eco System
   b) Weak Sustainability
   c) Environmental impacts
   d) Environmental Audit
   e) Water Pollution

SECTION - B (5 X 12 = 60 Marks)

Answer ALL Questions

2. a. Explain the theory of Boulding's Spaceship Earth.

OR

b. Analyze the Schumacher's small is beautiful theory.

3. a. Examine the causes for optimal depletion of renewable resources.

OR

b. Discuss the concept of sustainability development and its importance.

4. a. Write a note on Pigovian taxes and subsidies.

OR

b. Briefly discuss about global environmental problems.

5. a. Examine the indirect valuation methods for measuring environment.

OR

b. What is environmental costs and benefits? Explain non- user benefits .

6. a. Discuss the impact of Green revolution on environment.

OR

b. Analyze the various environmental laws in initiated Government of India.

★★★★★

FACULTY OF ARTS
M. A (TELUGU) IV SEMESTER (CBCS) EXAMINATIONS AUG/SEPT 2023
ఆధునిక తెలుగు సాహిత్య విమర్శ - II

PAPER - III

TIME: 3 HRS] **[MAX. MARKS: 80**

SECTION - A (5 X 4 = 20 మార్కులు)

1 **అన్ని ప్రశ్నలకు జవాబులు వ్రాయండి**

a సాహిత్య విమర్శ లక్షణాలు

b కె.వి.రమణారెడ్డి

c రాళ్లపల్లి అనంతకృష్ణ శర్మ

d కథాకథన శిల్పము

e కాలరేఖలు

SECTION – B (5 X 12 = 60 మార్కులు) అన్ని ప్రశ్నలకు జవాబులు వ్రాయండి

2 A ఆధునిక తెలుగు సాహిత్య విమర్శ స్వరూప స్వభావాన్ని వివరించండి

లేదా

B ఆధునిక తెలుగు సాహిత్య విమర్శ లో ప్రాగ్రూప దృక్పథాన్ని పరిచయం చేయండి

3 A ఆధునిక తెలుగు సాహిత్య విమర్శ లో తుమ్మపూడి మార్గాన్ని వివరించండి

లేదా

B ఆధునిక తెలుగుసాహిత్య విమర్శకుడుగాకోవెలసంపత్కుమార దృక్పథాన్ని పరిచయం చేయండి

4 A కట్టమంచి విమర్శ పద్ధతిని కవిత్వతత్త్వ విచారం ఆధారంగా భావనాశక్తి ప్రతిభలను చర్చించండి

లేదా

B రాళ్లపల్లి అనంతకృష్ణ శర్మ సారస్వతాలోకమును పరిచయం చేయండి

5 A రాయప్రోలు సుబ్బారావు అభినవ కవితా దృక్పథాన్ని చర్చించండి

లేదా

B విశ్వనాథ నన్నయగారి ప్రసన్న కథాకలితార్థయుక్తిని పరిచయం చేయండి

6 A కాలరేఖలు ఆధారంగా శేషేంద్ర విమర్శ రీతిని పరిచయం చేయండి

లేదా

B సాహిత్య వివేచనలో సుప్రసన్న విమర్శ పద్ధతిని వివరించండి

★★★★★

317/AUG23/IV-D(A)

FACULTY OF SOCIAL SCIENCES
M. A (SOCIOLOGY) IV SEMESTER (CBCS) EXAMINATIONS AUG/SEPT 2023
SOCIOLOGY OF HEALTH
PAPER – III (A)

Time: 3 Hours] **[Max. Marks: 80**

SECTION – A (4 X 5 = 20 Marks)

1. **Write Short notes on the following**
   a) Public Health
   b) Ecology and Health
   c) HIV/AIDs
   d) Health Insurance Schemes

SECTION – B (4 X 15 = 60 Marks)
Answer ALL questions

2. A) Highlight the objectives and principles of Health Education?

OR

B) What do you mean by Public Health? Discuss.

3. A) Explain the indicators of Health.

OR

B) Explain the major health services provided to people in India.

4. A) Write a note on Health Care Systems in India.

OR

B) Discuss major health programmes in India.

5. A) Explain the recommendations of Bhore Committe.

OR

B) Explain National Health Policy in India.

★★★★★

408/425/AUG23/IV-C

FACULTY OF COMMERCE
M.COM (GEN & FA) IV SEMESTER (CBCS) EXAMINATION AUG/SEPT 2023
FINANCIAL SERVICES MANAGEMENT
PAPER – III

TIME: 3 HRS] **[MAX. MARKS: 80**

SECTION - A (5 X 4 = 20 Marks)

1 **Answer ALL Questions**

A Objectives of Financial services

B Securitization

C Objectives of mutual funds

D Features of venture capital

E Factoring Vs. Forfeiting

SECTION – B (5 X 12 = 60 Marks)
Answer ALL Questions

2 A Explain the growing importance of financial services in India

OR

B Enumerate the problems and prospects of financial services in developing economies.

3 A Explain the origin and functions of Merchant Banking.

OR

B Explain the SEBI regulations related to Merchant Banking

4 A Explain the origin and growth of Mutual Funds in India

OR

5 A What is venture capital? Explain the origin and growth of venture capital financing in India

OR

B What is hire-purchase? Explain the salient features of hire-purchase

6 A What is Factoring and discuss the functions of Factoring

OR

B Explain the benefits and costs of factoring in India

★★★★★

408/AUG23/IV-C(B)

FACULTY OF COMMERCE
M.COM (GEN) IV SEMESTER (CBCS) EXAMINATION AUG/SEPT 2023
FIRE AND MARINE INSURANCE
PAPER – III (B)

TIME: 3 HRS] **[MAX. MARKS: 80**

SECTION - A (5 X 4 = 20 Marks)

1 **Answer ALL Questions**

A What is meant by indemnity?

B What do you understand by excess insurance?

C Describe the nature of coastal marine.

D Total loss Vs Partial loss

E State the different types of risks.

SECTION – B (5 X 12 = 60 Marks)
Answer ALL Questions

2 A Discuss in detail about the significance of fire insurance in the present context.

OR

B Write in detail about the origin and nature of fire insurance in the globe and India.

3 A Write in detail about (i) Subrogation (ii) Re insurance.

OR

B What are the different types of fire protection policies? Write in detail.

4 A Write in detail about the origin and growth of marine insurance in India.

OR

B Explain in detail about various kinds of marine insurance contracts.

5 A List out various documents required while presentation of claim under marine insurance.

OR

B Define general average loss and particular average loss and distinguish between the two.

6 A What are the different types of risks assumed and specific policies issued by private insurance companies? Write in detail.

OR

B Write in detail about (i) GIC (ii) ECGC

★★★★★

410/AUG23/IV-C

FACULTY OF COMMERCE
M.COM (CA) IV SEMESTER (CBCS) EXAMINATION AUG/SEPT 2023
MANAGEMENT INFORMATION SYSTEMS
PAPER - III

TIME: 3 HRS] **[MAX. MARKS: 80**

SECTION - A (5 X 4 = 20 Marks)
Answer ALL Questions

1 A Define Information Systems. Write the Types of it.

B What are Expert Systems?

C What are different Planning Strategies of Information Systems.

D What are Decision Support Systems?

E Write a short note on Global System Development.

SECTION – B (5 X 12 = 60 Marks)
Answer ALL Questions

2 A Describe the Components of Information Systems. Write the Functions of it.

OR

B Explain the Information Systems for Managerial Decision Support.

3 A Describe the Organizational and Behavioural Impacts with Information Systems.

OR

B What are Enterprise Business Systems? Describe the Benefits and Challenges of it.

4 A Describe any Software Development Life Cycles of Information Systems.

OR

B Discuss the Security Issues of Information Systems.

5 A Describe Financial Accounting System.

OR

B Explain Marketing Information Systems.

6 A Explain the Architecture of Information Technology.

OR

B Discuss the issues in Managing International Data Communications.

★★★★★

502/AUG23/IV-C(A)

FACULTY OF SCIENCE

M Sc (BOTANY) IV SEMESTER (CBCS R-19) EXAMINATIONS AUG/SEPT 2023

APPLIED PHYCOLOGY

PAPER – III (A)

TIME: 3 HRS] **[MAX. MARKS: 80**

SECTION - A (4 X 5 = 20 Marks)

1 **Answer ALL the questions**

a Algae as food

b *Spirulina*

c Eutrophication

d Algae as biofuel

SECTION - B (4 X 15 = 60 Marks)

Answer ALL questions

2 A Describe the media used for chlorophyceae and cyanophycea culture

OR

B Give a detailed account on the history and scope of algae

3 A Describe the mass cultivation and commercial value of Laminaria

OR

B Explain the role of algae in agriculture

4 A Write about the algae used as indicators of water pollution

OR

B Give an account of algae used in bioremediation

5 A Describe various algal blooms and toxic algae

OR

B Describe the role of alginic acid, agar- agar and carrageenam in industry

★★★★★

504/AUG23/IV-C(A)

FACULTY OF SCIENCE
M Sc (COMPUTER SCI.) IV SEMESTER (CBCS R-19) EXAMINATIONS AUG/SEPT 2023
DISTRIBUTED SYSTEMS
PAPER – III (A)

TIME: 3 HRS] **[MAX. MARKS: 80**

SECTION - A (4 X 5 = 20 Marks)

1 **Answer ALL the questions**

a What is a Virtualization?

b Explain briefly about Flat Naming.

c What is Fault Tolerance?

d Explain about DFS.

SECTION - B (4 X 15 = 60 Marks)
Answer ALL questions

2 A Discuss in detail the Definition, Goals and Types of Distributed Systems.

OR

B Explain in detail about Self-Management in Distributed Systems.

3 A a) Explain about Multicast Communication.
b) Discuss about Attribute based Naming.

OR

B Write a detailed note on Synchronization.

4 A Explain in detail about Replica Management and Consistency Protocols.

OR

B a) Discuss about Distributed Commit.
b) Explain briefly about Secure Channels.

5 A Write a detailed note on Fault Tolerance and Security of Distributed Object-based Systems.

OR

B Explain in detail about Distributed Web-based Systems.

★★★★★

504/AUG23/IV-C(B)

FACULTY OF SCIENCE
M. Sc (COMP. SCI) IV SEMESTER (CBCS) EXAMINATIONS, AUG/SEPT 2023
CLOUD COMPUTING
PAPER – III (B)

TIME: 3 HRS] **[MAX. MARKS: 80**

SECTION - A (4 X 5 = 20 Marks)

1 **Answer ALL the questions**

a Discuss about components of Cloud Computing.

b Explain recent trends and standards of Cloud Computing.

c Write a short note on Adoption Phases.

d Explain AAA model.

SECTION - B (4 X 15 = 60 Marks)

Answer ALL questions

2 A What is Virtualization? Explain Implementation Levels and Structure of Virtualization.

OR

B Write about various types and models of Clouds with examples.

3 A Explain about data security in Cloud? What are the challenges in data security?

OR

B Write a note on SaaS, PaaS and IaaS.

4 A What is Cloud Migration? Discuss techniques and phases of cloud migration.

OR

B Explain in detail SLA with cloud service providers?

5 A What is Security as a Service? Write in detail.

OR

B What is Mobile Computing? Explain its Architecture, Benefits and Challenges.

★★★★★

FACULTY OF SCIENCE

M Sc (MICROBIOLOGY) IV SEMESTER (CBCS R-19) EXAMINATIONS AUG/SEPT 2023

MICROBIAL BIOTECHNOLOGY

PAPER - III

TIME: 3 HRS] **[MAX. MARKS: 80**

SECTION - A (4 X 5 = 20 Marks)

1 **Answer ALL the questions**

a Maturation of beer

b Recovery of vitamin-B_{12}

c Penicillin recovery

d 11-hydroxylation

SECTION - B (4 X 15 = 60 Marks)

Answer ALL questions

2 A Describe the detail account on fermentative production of industrial alcohol.

OR

B Give detailed account on principles of wine making and its fermentation process.

3 A Describe the fermentative citric acid production.

OR

B Explain the upstream and downstream processing of glutamic acid production.

4 A Give the detailed account on penicillin production and product recovery.

OR

B Explain the process of fermentative production of tetracyclines and its uses.

5 A Explain the process forproduction of microbial enzymes and their applications.

OR

B Describe the types of vaccines and production of bacterial vaccines.

★★★★★

526/AUG23/IV-C(A)

FACULTY OF SCIENCE
M Sc (ZOOLOGY) IV SEM (CBCS R-19) EXAMINATIONS AUG/SEPT 2023
FISHERIES AND AQUACULTURE
PAPER - III

TIME: 3 HRS] **[MAX. MARKS: 80**

SECTION - A (4 X 5 = 20 Marks)

1 **Answer ALL the questions**

a Morphometric method of fish identification

b Lentic ecosystem of water bodies

c Plankton and its significance

d Ectoparasites of fishes

SECTION - B (4 X 15 = 60 Marks)
Answer ALL questions

2 A Write the Origin and evolution of Teleosti fishes in detail.

OR

B Explain the classification and characteristics of fishes with examples.

3 A Give an account on physical and chemical prosperities of water bodies

OR

B Write in detail account on the productivity of water bodies and its importance.

4 A Illustrate the differences of Mono, poly and composite fish culture systems.

OR

B Write the advantages and relevance of Integrated Aquaculture.

5 A Explain the helminth parasites of fishes and their control measures in detail

OR

B Write an account on fish fungal diseases and their pathogen city.

★★★★★

CBCS R-20 NEW

505/AUG23/IV-C(R20)

FACULTY OF SCIENCE

M. Sc. (MATHEMATICS) IV SEM (CBCS R-20 NEW) EXAMINATIONS AUG/SEPT 2023

FUNCTIONAL ANALYSIS

PAPER – III

TIME: 3 HRS] **[MAX. MARKS: 100**

SECTION - A (8 X 5 = 40 Marks)

1 **Answer ALL the questions.**

a Let N be a non-zero normed linear space, and prove that N is a Banach space if and only if {x: ||x||=1} is complete.

b If N is a finite-dimensional normed linear space of dimension n, show that N* also has dimension n. Use this to prove that N is reflexive.

c Show that the parallelogram law is not true in l_1^n (n> 1).

d If S is a non-empty subset of a Hilbert space, show that $S^{\perp} = S^{\perp\perp\perp}$.

e Show that an orthonormal set in a Hilbert space is linearly independent.

f Prove that an operator T onH is self-adjointif and only if (Tx,x) is real for all x.

g If T is an arbitrary operator on H, and if a and b are scalars such that |a| = |b|, then show that aT + bT* is normal.

h If P is the projection on a closed linear subspace M of H, then prove that

M reduces an operator T <=> TP = PT.

SECTION-B (4 X 15 = 60 Marks) Answer ALL the questions.

2 A Let M be a closed linear subspace of a normed linear space N. If the norm of a coset x + M in the quotient space N/M is defined by ||x+M||=inf {||x+m||:m∈M}, then prove that N/M is a normed linear space. Further, if N is a Banach space then so is N/M.

OR

B State and prove the Hahn-Banach Theorem.

3 A State and prove the Open Mapping Theorem.

OR

B (a)Prove that a closed convex subset C of a Hilbert space H contains a unique vector of smallest norm.
(b)If M is a closed linear subspace of a Hilbert space H, then prove that H = M ⊕ $M^{\perp}$.

4 A Let H be a Hilbert space, and let f be an arbitrary functional in H*. Then prove that there exists a unique vector y in H such that f(x)=(x,y) for every x in H*.

OR

B Prove that the adjoint operation T —>T* on B(H) has the following properties:

(i) $(T_1 + T_2)^* = T_1^* + T_2^*$ (ii) $(\alpha T)^* = \overline{\alpha} T^*$

(iii) $(T_1 T_2)^* = T_2^* T_1^*$ (iv) $T^{**} = T$

(v) $||T^*|| = ||T||$ (vi) $\left|\left|T^* T\right|\right| = ||T||^2$

5 A (a)If P is a projection on H with range M and null space, then prove that M ⊥ N if and only if P is self-adjoint; and in this case, N = $M^{\perp}$.
(b)If $P_1, P_2, \ldots, P_n$ are the projections on closed linear subspaces $M_1, M_2, \ldots, M_n$ of H, then prove that $P = P_1 + P_2 + \cdots + P_n$ is a projection <=>the P_i's are pairwise orthogonal (in the sense that $P_i P_j$ = 0 whenever$i \neq j$); and in this casey P is the projection on $M = M_1 + M_2 + \ldots + M_n$.

OR

B State and prove the Spectral Theorem.

★★★★★

775/AUG23/IV-C

FACULTY OF SCIENCE
M. Sc. (ENGG.PHYSICS) IV SEMESTER (CBCS) EXAMINATIONS AUG/SEPT 2023
ELECTRONIC AND PROCESS INTRUMENTATION
PAPER - III

[Max. Marks: 80

Time: 3 Hours]

SECTION –A (4 X 5 = 20 Marks)

1. **Answer the following**
   a) Write a note on Error in Measurement.
   b) What is Tacho meter? List the types of Tacho meters.
   c) What is Bimetal thermometer? Explain.
   d) Write a note on Venturi meter.

SECTION - B (4 X 15 = 60 Marks)

Answer ALL the questions

2. a) What are the basic requirements of transducer? Discuss about the Active and Passive transducers.

(OR)

b) Discuss the response of first order and second order systems to step, ramp and impulse inputs.

3. a) What are the objectives of data acquisition systems (DAS)? Discuss the digital storage Oscilloscope.

(OR)

b) What is data logger? Explain about the basic operation of a data logger and discuss the compact data logger.

4. a) Explain in detail about the principle and working of radiation and Optical Pyrometers.

(OR)

b) Discuss in detail about Bourdon tube gauge and Diaphragm gauges.

5. a) Describe the Construction and Working of Electromagnetic and Ultrasonic Flow meters

(OR)

b) Explain in detail about Hydraulic and pneumatic load cells .

★★★★★

509/AUG23/IV-C(A)

FACULTY OF SCIENCE
M. Sc. (PHYSICS) IV SEMESTER (CBCS) EXAMINATIONS AUG/SEPT 2023
MAGNETISM AND SUPERCONDUCTIVITY
(SOLID STATE PHYSICS SPECIAL)
PAPER - III

Time: 3 Hours] **[Max. Marks: 80**

SECTION – A (4 × 5 = 20 Marks)

1. Answer ALL the following

a. State and explain Curie's law of paramagnetism

b. What are spin waves? Explain them.

c. State and explain Meissner's effect

d. Explain Josephson Effect with a diagram

SECTION – B (4 × 15 = 60 Marks)

Answer ALL Questions

2. a). Obtain an expression for paramagnetic susceptibility. Discuss how this equation explains the behavior of rare earth ions.

OR

b). Explain Magneto-caloric effect and quote the experimental method for production of low temperature

3. a). Explain molecular field theory of ferrimagnetism. Write the properties and applications of the ferrimagnetic materials.

OR

b) Explain the theory of anti-ferromagnetism. Discuss the behavior of susceptibility of an anti-ferromagnetic material above and below Neel temperature.

4. a). Explain type-I and type-II superconductors. Discuss flux quantization of super- currents.

OR

b) Explain energy gap, specific heat, isotope effect and other thermo dynamical effects of superconductors in detail.

5. a). Explain the following:

(i) Landau's theory (ii) high temperature of superconductivity.

OR

b). Outline BCS theory and SQUID. Write the applications of superconductivity.

★★★★★

FACULTY OF SCIENCE
M.Sc (PHYSICS) IV SEMESTER (CBCS) EXAMINATIONS AUG/SEPT 2023
EMBEDDED SYSTEMS AND ITS APPLICATIONS
(ELECTRONICS SPECIAL)
PAPER - III

Time: 3 Hours] **[Max. Marks:80**

SECTION – A (4 X 5 = 20 Marks)

1. **Answer the following**

a) Differentiate between a Microprocessor and Microcontroller.

b) Explain Serial Communication of 8051 Microcontroller.

c) Explain I/O Ports of PIC Microcontroller.

d) Explain interfacing of Stepper Motor with any Microcontroller.

SECTION - B (4 X 15 = 60 Marks)
Answer ALL Questions

2. a) Explain four different addressing modes of 8051 with program examples.

OR

b) Discuss in detail about RAM Memory division, Special Function Registers and Stack operation of 8051 Microcontroller.

3. a) i) Discuss Byte wise, Bit wise logic operation of 8051 with necessary examples.

ii) Explain different Jump ranges along with the necessary instructions.

OR

b) i) Discuss different arithmetic instructions of 8051 microcontroller.

ii) Write an ALP for addition of two sixteen-bit numbers.

4. a) Discuss in detail about the architecture of PIC 16 series Microcontroller.

OR

b) Explain Interrupts, Timers and A/D of PIC Microcontroller

5. a) Discuss with necessary diagrams the interfacing of ADC, DAC with 89C51. Write the required ALP.

OR

b) Explain the interfacing of LVDT and Strain gauge with any given Microcontroller.

★★★★★

506/AUG23/IV-C(A)

FACULTY OF SCIENCE
M. Sc. (STATISTICS) IV SEMESTER (CBCS R-19) EXAMINATIONS AUG/SEPT 2023
RELIABILITY THEORY
PAPER – III

TIME: 3 HRS] **[MAX. MARKS: 80**

SECTION - A (4 X 5 =20 Marks)

1 **Answer ALL the questions**

a Distinguish component reliability and system reliability..

b Write the reliability function of about of n system.

c What is bath-tub curve? Explain.

d What is spare parts allocation..

SECTION - B (4 X 15 = 60 Marks)
Answer ALL questions

2 A Explain Coherent structures and their representation in terms of paths and cuts

OR

B Show that component redundancy is better than system redundancy with standard notations

3 A State the properties of association of random variables and explain any one property

OR

B Explain the notion of improved bounds on system reliability under modular decomposition.

4 A Explain the concept of convolution and mixtures of life distributions.

OR

B Define IFRA closure property, state and prove IFRA closure theorem

5 A Explain the estimation of two parameter weibull distribution

OR

B Explain the estimation of two parameter Gamma distribution

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FACULTY OF SCIENCE
M. Sc. (CHEMISTRY) IV SEMESTER (CBCS) EXAMINATION AUG/SEPT 2023
SUPRAMOLECULAR CHEMISTRY & BIOPHYSICAL METHODS
(INORGANIC CHEMISTRY SPECIAL)
PAPER-III

Time: 3 Hours] **[Max. Marks: 80**

SECTION - A (4 X 5 = 20 Marks)

1. Answer ALL Questions

a)Write a short note on co-complexation with suitable examples.

b) Explain the Denaturation of Nucleic acids.

c) Explain the use of salt back titrations in predicting nature of drug binding to DNA.

d) Discuss the principle involved in fluorescence spectroscopy.

SECTION -B (4 X 15 = 60 Marks)

Answer ALL Questions

2. a) What are the general principles involved in molecular recognition?

b) Write a note on macrocyclic and chelate effects with suitable examples.

(OR)

c) Describe multi step Host-Guest complexation and explain the corresponding thermodynamics

d) Explain cryptate effect and allosteric effect with suitable examples.

3. a) Draw the structures of B-DNA, A-DNA and Z-DNA and explain.

b) What are the three kinds of RNA and write their structures?

(OR)

c) Explain the B-A and B-Z transition forms of DNA.

d) Describe the secondary structure of DNA.

4 a) Discuss site exclusion model.

b) Explain viscosity studies in binding analysisof DNA with drugs.

(OR)

c) Discuss in detail about equilibrium dialysis and partition analysis.

d) What are the competitive effects of mono valent and di valent cations for DNA binding.

5 a) Explain the principle and instrumentation of ORD spectroscopy.

b) Write a note on fluorescence life time and quantum yield.

(OR)

c) Discuss the applications of Michaelis-Menton equation in enzyme catalysis.

d) How the fluorescence studies are useful in DNA binding studies?

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FACULTY OF SCIENCE
M.Sc. (CHEMISTRY) IVSEMESTER (CBCS) EXAMINATIONS AUG/SEPT 2023
DRUG SYNTHESIS AND MECHANISM OF ACTION
(ORGANIC CHEMISTRY SPECIAL)
PAPER - III

Time: 3 Hours] **[Max. Marks: 80**

SECTION – A (4 X 5 = 20 Marks)

1. Answer ALL the Questions

a. Outline the application of Classification of drugs.

b. Explain the use of vaccines

c. Explain the examples of Agonist and Antagonist

d. Describe the Three-Point Contact Model

SECTION – B (4 X 15 = 60 Marks)
Answer ALL the Questions

2. a) Write the mechanism of action of Sulphonamides

b) Write the mechanism of action of Penicillin

(OR)

c) Describe the Structure and mode of action of Clavulanic Acid

d) Write the synthesis of Omeprazole and Carbonic Anhydrase inhibitors

3. a) Write the Synthesis of Amsacrine

b) Write the Structure of Ofloxacin and Lomefloxacin.

(OR)

c) Write the Synthesis of Metronidazole, Dimetridazole and Tinidazole.

d) Write the Structure of Erythromycin, 5-Oxytetracycline and Streptomycin.

4. a) Write the Synthesis of Nifedipine and Diltiazem

b) Write the Synthesis and Pharmacological activity of Serotonin

(OR)

c) Describe the Estrogen receptors and Write theStructure of Tamoxifen.

d) Write the Synthesis of Acetyl Choline and Succinyl Choline

5. a) Write the Synthesis and Pharmacological activity of S-Ibuprofen

b) Discuss about Eutomer, Distomer and Eudismic ratio.

(OR)

c) Write the Synthesis and Pharmacological activity of (+)Ephedrine

d) Write the Synthesis and Pharmacological activity of S,S.- Captopril and S,S,S- Enalaprilate

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FACULTY OF SCIENCE
M. Sc. (CHEMISTRY) IV SEMESTER (CBCS) EXAMINATION AUG/SEPT 2023
CATALYSIS
(PHYSICAL CHEMISTRY SPECIAL)
PAPER - III

Time: 3 Hours] **[Max. Marks: 80**

SECTION – A (4 X 5 = 20 Marks)

1. Answer ALL the questions.

a) Discuss protolytic mechanism of acid catalysis.

b) Derive Laplace equation

c) How do you determine pore volume by BJH method? Explain.

d) Explain the factors influencing the rate of PTC reactions.

SECTION - B (4 X 15 = 60 Marks)
Answer ALL the questions.

2. a) Explain general mechanism of Catalysis. What is the difference between Arrhenius type of Complex and Van't Hoff type of intermediate.

b) Define Hammett acidity function. How do you measure this?

(OR)

c) Explain the use of Zeigler-Natta Catalyst in Homogeneous catalysis for polymerization of Olefins.

d) Write short notes on (i) Bunnett's theory (ii) Wacker process

3. a) What are the various types of adsorption? Explain the factors effecting Adsorption.

b) Explain the reaction between H_2 (g) and N_2 (g) catalyzed by surfaces to give NH_3(g).

(OR)

c) Define Zeta potential. How do you determine it?

d) Define CMC.What are the factors affecting the CMC of surfactants?

4. a) How do you determine the surface acidity by indicator method? Explain.

b) Explain the mechanism of surface catalyzed reactions.

(OR)

c) Discuss the Fischer-Tropsch synthesis of Methanol.

d) Write short notes on (i) Cracking and reforming (ii) Zeolites.

5. a) Discuss the principles of Phase transfer catalysis.

b) Define anchored catalysis. Explain HEW structure of Montmorillonite anchored catalysts.

(OR)

c) Write short notes on (i) Doped Semi Conductors and (ii) Coupled Semiconductors.

d) Explain the mechanism of Inverse Phase Transfer Catalysis.

★★★★★

009/AUG23/IV-D(A)

FACULTY OF ARTS

M.A. (ENGLISH) IV SEMESTER (CBCS) EXAMINATIONS AUG/SEPT 2023

ACADEMIC WRITING AND RESEARCH METHODOLOGY

PAPER – IV (A)

TIME:3 HRS] **[MAX.MARKS:80**

SECTION - A (4 X 5 = 20 Marks)

1 **Answer ALL the following questions**

A What are the factors influencing effective writing?

B Note making

C Narrative Writing

D Plagiarism

SECTION – B (4 X 15 = 60 Marks)

Answer ALL the following questions

2 A Explain Academic Writing Forms.

OR

B What is *Precis Writing*? Explain the Rules of Precis Writing.

3 A What is *Note Taking*? What is *Note Making*? What are the similarities between them?

OR

B Explain the steps involved in *Summarising*.

4 A What are the types of *Research*? Explain

OR

B Write a detail note on *Collecting*, *Analysing* and *Interpreting* "*Data*".

5 A How do you write *Book reviews* and *Film reviews*? Explain differences and similarities.

OR

B What is a basic outline of an academic paper? Explain the steps involved in it.

★★★★★

FACULTY OF ARTS
M.A. (ENGLISH) IV SEMESTER (CBCS) EXAMINATIONS, AUG / SEPT 2023
FOURTH WORLD LITERATURES
PAPER – IV (B)

Time: 3 Hours] **[Max. Marks: 80**

SECTION - A (4 X 5 = 20 Marks)

1. Answer ALL the following questions

A. Laxman Mane

B. Sketch the character Tayo

C. Shame and anger from *Halfbreed*

D. Oodgeroo Noonuccal

SECTION - B (5 X 15 = 60 Marks)
Answer ALL questions

2. (A) Laxman Mane has no pretentions as a writer. Discuss.

(OR)

(B) Sketch the characters Periyannan and Kathamuthu.

3. (A) Explain the major themes of N Scott Momaday's *House Made of Dawn.*

(OR)

(B) Thematic concern from Leslie Marmon Silko's *Ceremony.*

4. (A) *Halfbreed* is a story of survival, and of overcoming a sense of shame related to ethnic identity. Explain.

(OR)

(B) Write about Christian and Native American traditions Thomas King's *Green Grass, Running Water.*

5. (A) Explain 'land and dispossession' from Oodgeroo Noonuccal's poetry.

(OR)

(B) Write the point "breeding out the colour" in Kim Scott's *Benang.*

★★★★★

310/AUG23/IV-E(A)

FACULTY OF SOCIAL SCIENCES
M. S. W IV SEMESTER (CBCS) EXAMINATIONS AUG/SEPT 2023
RURAL AND TRIBAL COMMUNITY DEVELOPEMENT - II
PAPER – IV (A)

TIME: 3 HRS] **[MAX.MARKS: 80**

SECTION - A (4 X 5 = 20 Marks)

1 **Answer ALL the questions**

a Explain in brief the models of self help groups

b Explain the components of watershed Management

c Define the term community forest management

d What do you know by natural resource management

SECTION - B (4 X 15 = 60 Marks)
Answer ALL questions

2 A Write a detailed note on history of women's self help group movement

OR

B Define microfinance explain the objectives composition and functioning of microfinance

3 A What do you mean by watershed management? Explain the steps planning and management

OR

B Write a note on watershed habitations in India

4 A Discuss the various tribal development programmes and its importance in five year plans

OR

B What do you understand by Vana Samrakshana samithi. Discuss its constitution, rights and duties of VSS members

5 A Write a detailed note and tribal community based organisations in tribal community development in India

OR

B Discuss the problems and measures for the development of tribes and weaker sections

★★★★★

310/AUG23/IV-E(B)

FACULTY OF SOCIAL SCIENCES

MSW IV SEMISTER (CBCS) EXAMINATIONS AUG/SEPT 2023

MEDICAL SOCIAL WORK & COMMUNITY HEALTH

PAPER – IV (B)

Time: 3 Hrs] **[Max. Marks: 80**

SECTION - A (4 X 5 = 20 Marks)

1. Answer ALL the Questions

a) What is social work in health care management?
b) The causes of disability
c) Nutritional requirement for children
d) What is community health?

SECTION - B (4 X 15 = 60 Marks)

2. a. Highlight the historical development of medical social work in India.

(OR)

b. Narrate a common challenges experienced by social workers in health care.

3. .a. What is the role of social worker in community health? Discuss.

(OR)

b. Define Classification of foods and Explain Nutritional requirement and balanced diet for women and children?

4. a. Narrate a case history with rehabilitation plan from your field work experience.

(OR)

b. What are the cases of disability? How will you manage disability as a medical social worker - Discuss.

5. a. Explain any one social work Model of intervention with an example from your field work.

(OR)

b. Why is team work essential in medical social work? Explain the role of the medical social worker as part of the multidisciplinary team with example.

★★★★★

FACULTY OF ARTS

M.A (Urdu) IV Semester Examination (CBCS) AUG/SEPT 2023

Paper - IV

چوتھا پرچہ : مکتوب نگاری Maktoob Nigari

[Time : 3 Hours] **Answer ALL the questions** **Max Marks : 80**

(حصہ الف)

نوٹ: تمام سوالات حل کیے جائیں۔ ہر سوال کے چار نشانات ہیں۔ ہر جواب پندرہ سطروں میں تحریر کیا جائے۔ **(5 x 4 = 20)**

1. نجی خطوط کی تعریف کیجیے اور نمونے کا ایک نجی خط تحریر کیجیے۔
2. مکتوب کی تہذیبی اہمیت اجاگر کیجیے۔
3. اردو مکتوب نگاری کی تاریخ میں رجب علی بیگ سرور کے مقام کا تعین کیجیے۔
4. سرسید احمد خاں کے خطوط کی انفرادیت واضح کیجیے۔
5. ''صلیبیں مرے دریچے میں'' پر مختصر نوٹ لکھیے۔

(حصہ ب)

نوٹ: تمام سوالات حل کیے جائیں۔ ہر سوال کے بارہ نشانات مختص ہیں۔ ہر سوال کا جواب چار صفحات سے زیادہ نہ ہو **(5 x 12 = 60)**

6. (A) مکتوبات کی تاریخ اور سوانحی پہلوؤں پر روشنی ڈالیے؟

یا

(B) خطوط کی ادبی اور لسانی اہمیت واضح کیجیے۔

7. (A) اردو مکتوب نگاری کے فروغ میں غالب کی خدمات کا جائزہ لیجیے۔

یا

(B) اقبال کے خطوط کی اہمیت پر روشنی ڈالیے۔

8. (A) اردو میں مکتوب نگاری کی روایت پر جامع نوٹ تحریر کیجیے۔

یا

(B) حالی کے مکاتیب کا تنقیدی جائزہ لیجیے۔

9. (A) مکتوب نگاری کی مختلف قسموں کا تعارف کیجیے۔

یا

(B) مکتوب نگاری کے فن، تکنیک اور موضوعات پر اظہار خیال کیجیے۔

10. (A) ''غبار خاطر'' کی ادبی، علمی اور تہذیبی اہمیت پر روشنی ڈالیے۔

یا

(B) صفیہ اختر کے خطوط کے مجموعے ''زیر لب'' کی امتیازی خصوصیات بیان کیجیے۔

.....

313/AUG23/IV-D(A)

FACULTY OF SOCIAL SCIENCES

M A (ECONOMICS) IV SEMESTER (CBCS) EXAMINATIONS AUG/SEPT 2023

ECONOMETRICS -II

PAPER – IV (A)

Time: 3 Hrs] **[Max. Marks: 80**

SECTION – A (4 X 5 = 20 Marks)

1. **Answer ALL the questions**
   a) Rank condition
   b) ARDL model
   c) Casuality test
   d) Engel function

SECTION - B (4 X 15 = 60 Marks)

Answer ALL Questions

2. A) Explain the indirect least square method

OR

B) State and explain ordinary least square estimators.

3. A) Explain the partial adjustment model

OR

B) Discuss the koyack distributed lab models

4. A) Describe the Granger and Sims test models with suitable example

OR

B) Discuss the various unit to test methods

5. A) Discuss the estimation of MPC and consumption function

OR

B) Explain the estimation of short run and long run price elasticities.

★★★★★

313/AUG23/IV-D(B)

FACULTY OF SOCIAL SCIENCES
M. A (ECONOMICS) IV SEMESTER (CBCS) EXAMINATIONS AUG/SEPT 2023
LABOUR ECONOMICS
PAPER – IV (B)

Time: 3 Hrs] **[Max. Marks: 80**

SECTION – A (4 X 5 = 20 Marks)

1. Answer ALL the questions

a) Occupational distribution of work force in India

b) SHGs

c) Labour Productivity

d) Female labour

SECTION – B (4 X 15 = 60 Marks)
Answer ALL the questions

2. a. Explain the characteristics of labour markets.

OR

b. Analyze the disadvantages of unorganized sector labour.

3. a. Explain the relationship between growth and development.

OR

b. Discuss the impact of globalization on labour.

4. a. Examine the marginal productivity theory of wages.

OR

b. How legislation was involved in to implementation of minimum wages in India.

5. a. Examine the growth and structure of labour unions.

OR

b. Discuss about problems of trade unions in India.

★★★★★.

FACULTY OF ARTS
M.A.(TELUGU) IV SEMESTER (CBCS OLD) EXAMINATIONS AUG/SEPT 2023
కథానిక సాహిత్య వికాసం

PAPER – IV (B)

TIME: 3HRS] **[MAX. MARKS: 80**

విభాగం – A (5 X 4 = 20 మార్కులు)

1 **ఈ ప్రశ్నలన్నింటికి సమాధానలను వ్రాయుము**

A మినీ కథ

B కథానిక స్వరూపం

C కథా ప్రయోజనం

D తెలంగాణ కథ

E పి .యశోద రెడ్డి

విభాగం – A (5 X 12 = 60 మార్కులు)

ఈ ప్రశ్నలన్నింటికి సమాధానలను వ్రాయుము

2 A కథా సాహిత్య స్వరూప స్వభావాలను వివరించండి

OR

B మినీ కథకు ,పెద్ద కథ కు మధ్య ఉన్న బేధాన్ని విశ్లేషించండి

3 A తెలంగాణ కథా వికాసాన్ని వివరించండి

OR

B తెలంగాణ కథ వాస్తు శిల్పాలను తెలుపండి

4 A రాయలసీమ కథ పరిణామాలను తెలుపండి

OR

B కోస్తాఆంధ్ర కథానిక వికాసాన్ని రాయండి

5 A గొల్ల రామవ్వ కథా ప్రయోజనాన్ని తెలుపండి

OR

B ఉప్పునీరు కథ వల్ల కలిగిన సామాజిక ప్రయోజనాన్ని తెలుపండి

6 A ముదిగంటి సుజాతరెడ్డి తెలంగాణ కథా విమర్శ పై చేసిన కృషిని తెలుపండి

OR

B రాచపాళెం చంద్రశేఖరరెడ్డి కథానిక విమర్శను విశ్లేషించండి

★★★★★

FACULTY OF ARTS
M. A (TELUGU) IV SEMESTER (CBCS) EXAMINATIONS AUG/SEPT 2023
ప్రాంతీయ అధ్యయనం - తెలంగాణ తెలుగు సాహిత్యం

PAPER - IV (A)

TIME: 3 HRS] **[MAX. MARKS: 80**

SECTION - A (4 X 5 = 20 మార్కులు)

1 **అన్ని ప్రశ్నలకు జవాబులు వ్రాయండి**

a తెలంగాణ గ్రంథాలయాలు

b గోనబుద్ధారెడ్డి

c శేషాద్రి రమణకవులు

d కాలువ మల్లయ్య

SECTION - B (4 X 15 = 60 మార్కులు)

అన్ని ప్రశ్నలకు జవాబులు వ్రాయండి

2 A తెలంగాణ ప్రత్యేక రాష్ట్ర ఉద్యమ స్థితులను వివరించండి

లేదా

B తెలంగాణలో జాతీయోద్యమ రీతిని వివరించండి

3 A బమ్మెర పోతన భాగవత రచనా రీతిని వివరించండి

లేదా

B తెలంగాణలో అచ్చతెలుగు కావ్య వికాసాన్ని వివరించండి

4 A ఆధునిక తెలంగాణ వికాసంలో దేవులపల్లి రామానుజరావు పాత్రను చర్చించండి

లేదా

B జువ్వాడి గౌతమ రావు, మలయశ్రీ రచనలను పరిచయం చేయండి

5 A తెలంగాణ మాండలిక పదాలు తెలుగు అకాడమి కృషిని వివరించండి

లేదా

B తెలంగాణ కథా రచయితగా బోయజంగయ్య మార్గాన్ని పరిచయం చేయండి

★★★★★

317/AUG23/IV-E(A)

FACULTY OF SOCIAL SCIENCES
M. A (SOCIOLOGY) IV SEMESTER (CBCS) EXAMINATIONS AUG/SEPT 2023
SOCIAL MOVEMENTS IN INDIA
PAPER – IV (A)

Time: 3 Hours] **[Max. Marks: 80**

SECTION – A (4 X 5 = 20 Marks)

1. **Write Short notes on the following**
   a) Briefly discuss the Environmental Movement.
   b) Self-respect movements of Gonds.
   c) Write about Bharatiya Kissan Sammelan.
   d) Explain the Anti Arrack Movements.

SECTION – B (4 X 15 = 60 Marks)
Answer ALL questions

2. a) Define the concept of Social movement, and explain its types.

OR

b) Define Feminism and explain different theories of Feminism.

3. a) Explain the evolution and theories of Arya Samaj.

OR

b) Write about the different Self-respect Movements.

4. a) Explain the problems of the Indian Peasants.

OR

b) Discuss the Peasant movements during British period.

5. a) Describe the historical background of Regional movement in India.

OR

b) Examine the impact of social movements on social policy.

★★★★★

317/AUG23/IV-E(B)

FACULTY OF SOCIAL SCIENCES
M. A (SOCIOLOGY) IV SEMESTER (CBCS) EXAMINATIONS AUG/SEPT 2023
CRIMINOLOGY AND FORENSIC SCIENCE (INTERDISCIPLINARY)
PAPER – IV (B)

Time: 3 Hours] **[Max. Marks: 80**

SECTION – A (4 X 5 = 20 Marks)

1. **Write Short notes on the following**
   a) Define Social deviance.
   b) Social causes of crime.
   c) What is crime?
   d) What is correction?

SECTION – B (4 X 15 = 60 Marks)
Answer ALL questions

2. (A) Explain the types and causes of juvenile delinquency.

OR

(B) Discuss Sociological theories of Crime.

3. (A) Discuss the Positivist perspective on crime causation.

OR

(B) Explain the psychological causes of crime.

4. (A) Analyze the changing profile of crime and criminals in India.

OR

(B) What is corruption? Explain the evil effects of corruption.

5. (A) What is victimology? Discuss its nature and scope.

OR

(B) Discuss the usage and importance of Forensic Science.

★★★★★

410/AUG23/IV-D

FACULTY OF COMMERCE
M.COM (CA) IV SEMESTER (CBCS) EXAMINATION AUG/SEPT 2023
RELATIONAL DATABASE MANAGEMENT SYSTEMS
PAPER - IV

TIME: 3 HRS] **[MAX. MARKS: 80**

SECTION - A (5 X 4 = 20 Marks)

1 **Answer ALL Questions**

A Write different Database Users.

B Define a Key. Specify different Types of Keys.

C Define Functional Dependencies. How to represent them?

D What are Views? How to create a View?

E What is Concurrency Control?

SECTION – B (5 X 12 = 60 Marks)
Answer ALL Questions

2 A Define DBMS. Explain the Advantages of using DBMS.

OR

B What are Data Models? Explain the Classification of DBMS.

3 A Explain in detail ER Model Concepts.

OR

B How to Specify Various Constraints on ER Diagrams? Show them with Diagrams.

4 A Explain the process of Transforming ER diagrams into Tables.

OR

B What is Normalization? Explain 1NF, 2NF, 3NF and BCNF.

5 A Describe DDL, DML and DCL commands in SQL.

OR

B Describe the Aggregate Functions in SQL with example Queries.

6 A Define Transaction. Describe the Properties of Transaction.

OR

B Describe the Concurrency Control Based on the Time Stamp Ordering.

★★★★★

FACULTY OF COMMERCE
M. Com (GEN & FA) IV SEMESTER (CBCS) EXAMINATIONS AUG/SEPT 2023
FINANCIAL DERIVATES
PAPER – IV (A)

TIME: 3 HRS] **[MAX. MARKS: 80**

SECTION - A (5 X 4 = 20 Marks)

1 **Answer ALL Questions**

A Marking to market

B Interest rate futures

C Intrinsic value

D Interest rate SWAPs

E Clearing procedure

SECTION – B (5 X 12 = 60 Marks)
Answer ALL Questions

2 A Write a note on different types of derivatives.

OR

B Explain the trading and settlement mechanism of derivatives

3 A Discuss the various trading strategies using futures.

OR

B The current spot price of a 100-rupee share is Rs 302.60. Obtain the fair price of December futures contract on this share assuming the risk-free rate of return to be 9 per cent and the market lot size as 250. The maturity date is 73 days from today. How would the value of the contract be affected if a dividend 8 per cent is expected in 30 days' time?

4 A Give a brief account of different types of option

OR

B From the following data, obtain the call and put option values based on Black & Scholes' formulation:

Stock price	= Rs. 206
Exercise price	= Rs. 200
Time to expiration	= Rs. 47 days
Standard deviation of the continuously compound rate of return on stock	= 0.26
Continuously compound rate of return	= 8 %

Also obtain the values of various Greeks.

5 A Explain the trading mechanism of currency SWAPs

OR

B What is the procedures for valuation of SWAPs

6 A What are regulation for clearing and setting of derivates?

OR

B Give a brief account of J.R. Varma Committee report on derivatives trading.

★★★★★

408/AUG23/IV-D(B)

FACULTY OF COMMERCE
M.COM (GEN) IV SEMESTER (CBCS) EXAMINATIONS AUG/SEPT 2023
INSURANCE FINANCE AND ADMINISTRATION
PAPER – IV (B)

TIME: 3 HRS] **[MAX. MARKS: 80**

SECTION - A (5 X 4 = 20 Marks)

1 **Answer ALL Questions**

A Write a brief note about mortality table.

B What do you mean by margin adjusting?.

C Describe the nature of surrender value.

D Administrative setup of GIC.

E Write the salient features of General Insurance Company of India act 1976.

SECTION – B (5 X 12 = 60 Marks)
Answer ALL Questions

2 A Discuss the importance of mortality tables in Insurance business.

OR

B Explain in detail about mortality tables for annuities.

3 A Define gross premium and net premium and draw the differences between them.

OR

B Write in detail about (i) actuarial valuation (ii) Temporary insurance

4 A Why do insurance companies need to maintain reserves? Explain.

OR

B How do insurance companies distribute the surplus? Explain.

5 A Draw the administrative set up of provident fund companies doing insurance business.

OR

B Discuss in detail about the machinery of decision making used by insurance companies.

6 A Write in detail about Export Credit and Guarantee Corporation act.

OR

B Critically examine the working of IRDA in the past one decade (from 2010 to 2020)

★★★★★

502/AUG23/IV-D(A)

FACULTY OF SCIENCE
M Sc (BOTANY) IV SEMESTER (CBCS R-19) EXAMINATIONS AUG/SEPT 2023
BIOFERTILIZERS AND ORGANIC FARMING
PAPER – IV (A)

TIME: 3 HRS] **[MAX. MARKS: 80**

SECTION - A (4 X 5 = 20 Marks)

1 **Answer ALL the questions**

a Soil reclamation

b *Azatobacter*

c Free living nitrogen biofertilizers

d *Trichoderma*

SECTION - B (4 X 15 = 60 Marks)
Answer ALL questions

2 A Give a detailed account on the plant growth promoting rhizobacteria and fungi

OR

B Describe the different mass cultivation techniques

3 A Discuss on the mass cultivation of *Rhizobium* and *Frankia*

OR

B Give a detailed account on the PGR formulations and their applications

4 A Write a detailed account on the cultivation of blue green algae

OR

B Explain the utilization of blue green algae in agriculture

5 A Write about the different types of micorrhizal fungi

OR

B Explain the production of bioinnoculants and their application methods

★★★★★

504/AUG23/IV-D(A)

FACULTY OF SCIENCE
M Sc (COMPUTER SCI.) IV SEMESTER (CBCS R-19) EXAMINATIONS AUG/SEPT 2023
MOBILE COMPUTING
PAPER – IV (A)

TIME: 3 HRS] **[MAX. MARKS: 80**

SECTION - A (4 X 5 = 20 Marks)

1 **Answer ALL the questions**

a Explain about Signals.

b What is Infrared?

c Briefly explain about MobileIP.

d Explain about WWW.

SECTION - B (4 X 15 = 60 Marks)
Answer ALL questions

2 A Explain in detail the Motivation for a Specialized MAC.

OR

B Write a detailed note on TDMA and CDMA.

3 A Explain in detail about Infrastructure and ad-hoc networks.

OR

B Discuss in detail about HPERLAN and Bluetooth.

4 A What is Traditional TCP? Explain Classical TCP improvements.

OR

B What are ad-hoc networks? Explain in detail TCP over 2.5/3G Wireless Networks.

5 A Write a detailed note on File Systems.

OR

B Discuss in detail about WAP 2.0

★★★★★

FACULTY OF SCIENCE
M Sc. (MICROBIOLOGY) IV SEMESTER (CBCS R-19) EXAMINATIONS AUG/SEPT 2023
APPLIED MICROBIOLOGY
PAPER – IV

TIME: 3 HRS] **[MAX. MARKS: 80**

SECTION - A (4 X 5 = 20 Marks)

1 **Answer ALL the questions**

a TCA cycle

b Lipases

c *Streptomyces scabies*

d Biosensors

SECTION - B (4 X 15 = 60 Marks)
Answer ALL questions

2 A Describe the Aerobic & An erobic respiration process signifying the Fermentation process.

OR

B Write and account on (i) Glycolysis & (ii) Strain improvement

3 A Write an essay on production of Microbial products: Bacteriocins & Bioemulsifiers.

OR

B Explain the techniques for rapid detection & prevention of pathogenic micro organisms.

4 A Describe infections caused by *Helicoverpa armigera* & *Spodopetera litura*

OR

B Describe the Biological and Chemical control methods for plant diseases and pest management.

5 A Describe the scope and development of Nanotechnology.

OR

B Write an essay on Nanomedicine, cancer diagnostics &its treatment.

★★★★★

526/AUG23/IV-D(A)

FACULTY OF SCIENCE

M. Sc (ZOOLOGY) IV SEMESTER (CBCS R-19) EXAMINATIONS AUG/SEPT 2023

ENTOMOLOGY

PAPER - IV

Time: 3 Hours] **[Max. Marks: 80**

SECTION – A (4 X 5 = 20 Marks)

1 **Answer ALL the Questions**

a) Head Segmentation

b) Types of Tracheal Systems

c) Life History of Honey Bees

d) Bioluminescence

SECTION – B (4 X 15 = 60 Marks)

Answer ALL the questions.

2 a) Explain Details of the Habitat and Internal Anatomy and classification up to families with examples you have studied.

OR

b) Explain Insect Characters and evolution of Insects in detail.

3 a) Discuss Integument structure, Physiology and functions of Integument.

OR

b) Discuss Endocrine System Systems and Sense Organs of Insects.

4 a) Elaborate on silk worms Rearing Technology of Mulberry Silkworm and ad a not on pets of Mulberry.

OR

b) Discuss Lac culture and Add a note on strains of Lac Insect and their propagation.

5 a) Explain Metamorphosis and write notes on Larva and Pupa structure and types

OR

b) Give an account on Insect Behavior. Write detailed notes on Reproductive Behavior you have studied.

★★★★★

CBCS R-20NEW

505/AUG23/IV-D(A)(R20)

FACULTY OF SCIENCE

M.Sc. (MATHEMATICS) IV SEM (CBCS R-20 NEW) EXAMINATIONS AUG/SEPT 2023

GRAPH THEORY

PAPER – IV (A)

TIME: 3 HRS] **[MAX. MARKS: 100**

SECTION - A (8 X 5 = 40 Marks)

1 **Answer ALL the questions.**

a Give an example of a nonempty set and a relationon the set thatsatisfies each of the following combinations of properties; draw adigraph of the relation.

(i). Symmetric and transitive, but not reflexive.
(ii).Symmetric and reflexive, but not transitive.
(iii). Transitive and reflexive, but not symmetric.
(iv). Transitive and reflexive, but not antisymmetric.

b Suppose R is an arbitrary transitive reflexive relation on a set A.Prove that the relation E defined by $x\ E\ y$iff$x\ R\ y$ and $y\ R\ x$ is anequivalencerelationon A.

c Draw a picture for the following graph and state whether itis directed or non-directedand whetherit is simple.

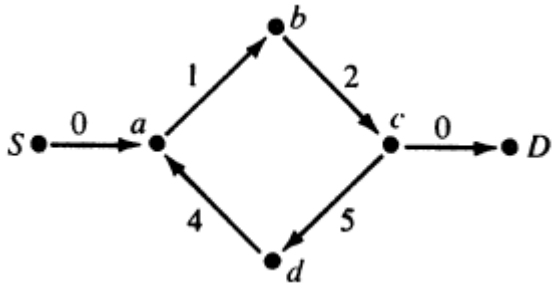
$G_1 = (V_1, E_1)$, where $V_1 = \{a, b, c, d, e\}$ and $E_1 = \{\{a, b\},\ \{a, e\}, \{a, c\}, \{a, d\}, \{e, c\},\ \{c, a\}\}$

d Give an example of two non-directedgraphswith 4 vertices and2 edges that are not isomorphic.Verify that they are notisomorphic.

e Show that if G is a polyhedral graph, then there is a regionofdegree≤ 5.

f Show that a directed graph that contains an Euler circuit isstrongly connected.

g Determinewhether the following graph represent transportnetworks.Explainyour answer.



h Disprove the following:

(i). If all theedgesofa transport network have the same capacity,then allS-Dcutshavethe same capacity.
(ii).If F is a flow such that | F | = 0, then F isthe zeroflow.

SECTION-B (4 X 15 = 60 Marks)

Answer ALL the questions.

2 A Let $[A, \leq]$be posetwhere$A$ is a finite set.
(i). Prove that A contains at least one maximal element and at leastoneminimal element.
(ii).If, in addition, $[A, \leq]$is a lattice,prove that A contains a leastelement and a greatestelement

OR

(Contd.....)

B In each of the following, let R be a relation on $A = \{a, b, c, d\}$ whoseadjacencymatrix is given.Computethe adjacency matrix of R^+using Warshall's algorithm

(i) $\begin{bmatrix} 0 & 1 & 0 & 0 \\ 1 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 0 & 0 \end{bmatrix}$ (ii) $\begin{bmatrix} 1 & 0 & 0 & 1 \\ 1 & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 \end{bmatrix}$

3 A Find the diameter, girth, andcircumference of the following graphs.
(i) C_5 (ii) K_5 (iii) $K_{3,3}$

OR

B Let $T = (V,E)$ be a directed graph that is a tree and v_0 be a vertexin V. Suppose $v_1, \ldots, v_k$ are the vertices adjacent to v_0. Let $S_i = \{u | u$ is connected to $v_i$by a path that doesnot traverse$v_0\}$, $E_i = E(S_i \times S_i)$ and $T_i = (S_i, E_i)$, for i = 1,.. .,k.
(i). Showthat thesubgraphs $T_i$are disjoint.
(b) Show that each T_i is a tree.
(c) Show that every edge of T not incident to v_0 is in one of the$T_i's$

4 A Use Grinberg's theorem to showthat thereareno planarHamiltonian graphs with
(i). regions of degree 5, 8,and 9 with exactly one region of degree 9.
(ii).regions of degree 5, 8, 9, and 11with exactly one region with degree 9.
(iii). Regionsofdegree4 and 5 and only one region of degree4.
(iv). regions of degree 4, 5, and 8 and only one region of degree 4.

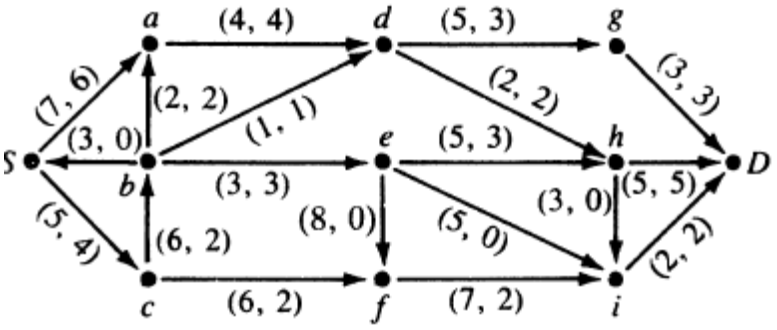
OR

B Prove that every planar graph with less than 12 vertices has avertex of degree ≤ 4. Then prove that every such graph is 4-colourable.

5 A It is possibleto go from city A to city C either directly or by goingthrough city B.Duringtheperiod4:00to5:00p.m. the average triptimes are 30 minutes from A to$B$, 15 minutes from B to C,and 30minutesfrom A to C. The maximum capacities of the routesare4000vehicles on the A to B route, 3000vehicleson the B to C route,and 6000vehicleson the A to C route. Represent the flow of trafficfrom A to $C$from 4:00 to 5:00 p.m. as a transport network

OR

B Find all minimal cuts in the following network:



★★★★★

775/AUG23/IV-D(A)

FACULTY OF SCIENCE
M. Sc. (ENGG.PHYSICS) IV SEMESTER (CBCS) EXAMINATIONS AUG/SEPT 2023
FEEDBACK AND PROCESS CONTROL SYSTEMS
PAPER – IV (A)

[Max. Marks: 80

Time: 3 Hours]

SECTION –A (4 X 5 = 20 Marks)

1. **Answer the following**
   a) What are the basic components of control system? Explain.
   b) Write a note on Effect of measurement lag.
   c) What is feed forward modification?
   d) Explain Nyquist's stability. What is its significance?

SECTION - B (4 X 15 = 60 Marks)

Answer ALL the questions

2. a) Discuss open loop and closed loop control system with suitable example also list the merits and demerits.

(OR)

b) Explain the transient response of proportional integral control of single and two capacity process control system.

3. a) Describe in detail about the frequency response of proportional integral and derivative controllers.

(OR)

b) Discuss the changes in set point and changes in load. Explain the use of closed loop response to predict transient response.

4. a) What is signal flow graph? Describe the terms used in signal flow graph. Discuss the signal flow graph with suitable example.

(OR)

b) Explain in detail about the Loop and Nodal analysis of active networks.

5. a) Define polar and Bode plots? Also Explain the procedure to construct a polar and the bode plots.

(OR)

b) What is signal reconstruction? Discuss in detail about the spectrum analysis of sampling process.

★★★★★

509/AUG23/IV-D(A)

FACULTY OF SCIENCE
M. Sc. (PHYSICS) IV SEMESTER (CBCS) EXAMINATIONS AUG/SEPT 2023
MATERIALS AND CHARACTERIZATION TECHNIQUES
PAPER – IV (A)

Time: 3 Hours] **[Max. Marks: 80**

SECTION – A (4 × 5 = 20 Marks)

1. Answer the following

a. Define proper and improper ferroelectrics

b. Explain glass transition phenomenon.

c. What are carbon-carbon composites? Explain

d. Briefly describe about X-ray powder diffractometery technique.

SECTION – B (4 × 15 = 60 Marks)

Answer ALL Questions

2. a). Describe different ferroelectric phase transition concepts in detail

OR

b). Explain the concept of ferroelectric domain pairs and switching-phenomenon. Mention applications of ferroic materials.

3. a). Discuss molecular structures of polymers. Explain stress and strain behavior of polymers.

OR

b) Explain synthesis of glass materials and write the application of glasses.

4. a). Discuss the different structural composite materials and write its application.

OR

b) Explain the different types of fibers. Discuss how fiber length and concentration influence the structural properties?

5. a). Describe the construction and working principles of SEM and TEM.

OR

b). Describe TGA and DSC characterization techniques with diagrams.

★★★★★

509/AUG23/IV-D(B)

FACULTY OF SCIENCE
M. Sc (PHYSICS) IV SEMESTER (CBCS) EXAMINATIONS AUG/SEPT 2023
OPTICAL, SATELLITE AND MOBILE COMMUNICATIONS
(ELECTRONICS SPECIAL)
PAPER – IV (B)

Time: 3 Hours] **[Max. Marks: 80**

SECTION – A (4 X 5 = 20 Marks)

1. Answer the following:

a) Explain how optical fibers will help in communication.

b) Discuss about Geo Synchronous satellite and its orbits.

c) What are Surveillance satellites?

d) Explain the significance of Cellular Mobile systems.

SECTION – B (4 X 15 = 60 Marks)
Answer ALL Questions

2 a) Explain scalar wave equation and the modes of a fiber. Also discuss modal analysis for a step index fiber.

OR

b) Discuss single mode fibers and multimode fibers with its optimum profile. Also explain first order and second generation optical fiber communication systems.

3. a) Explain in detail the Telemetry, Command and Control sub-systems of a satellite system with necessary block diagram.

OR

b) Explain Satellite height, speed, angle of inclination, position coordinates Azimuth and elevation. And also explain about transponders.

4. a) Describe Antenna, Receiver and Transmitter subsystems of a satellite with necessary diagrams.

OR

b) Describe different features of Navigation satellite, global positioning systems(GPS), space segment, control segment, GPS receivers.

5. a) Explain the different aspects involved in the planning of a cellular system design, and elements of cellular system design.

OR

b) Explain basic cellular system, performance criteria and operation of a cellular system.

★★★★★

FACULTY OF SCIENCE
M. Sc (STATISTICS) IV SEMESTER (CBCS R-19) EXAMINATION AUG/SEP 2023
ADVANCED OPERATIONS RESEARCH
PAPER –IV (B)

TIME: 3 HRS] **[MAX. MARKS: 80**

SECTION – A (4 X 5 = 20 Marks)

1. Answer ALL the following questions.

a) Define general non-linear programming problem.

b) Define Integer Goal Programming Problem.

c) State the different decision making environments?

d) State S-S policy.

SECTION – B (4 X 15 = 60 Marks)

Answer ALL the following questions.

2. A) Derive Kuhn – Tucker conditions for a non-linear programming problem with one inequality constraint in 'n' variables.

OR

B) Explain the Generalized Lagrange multiplier technique for solving non-linear programming problem.

3. A) Explain how Knapsack problem can be solved using Dynamic Programming Problem.

OR

B) Define Bellman's Principle of optimality and write the characteristics and forward and backward approaches to Dynamic programming problem.

4. A) Explain different criterion to solve a decision problem under risk.

OR

B) Explain Decision making under certainty, uncertainty and under Risk.

5. A) Explain in detail about perishable inventory models when demand in uniform, with and without shortages, where the units are discrete and continuous..

OR

B).Explain the replacement of items with long life.

★★★★★

FACULTY OF SCIENCE
M. Sc. (CHEMISTRY) IV SEMESTER (CBCS) EXAMINATIONS AUG/SEPT 2023
SEPARATION METHODS, GREEN CHEMISTRY AND NANOTECHNLOGY
(INORGANIC CHEMISTRY SPECIAL)
PAPER – IV (A)

Time: 3 Hours] **[Max. Marks : 80**

SECTION – A (4 X 5 = 20 Marks)

1. **Answer ALL Questions**

a) Explain the solvent extraction of metals with suitable examples.

b) Give one example of both ternary and quaternary mixed ligand complexes.

c) Write a short note on reducing toxicity and measuring toxicity.

d) What are magic numbers? Explain.

SECTION –B (4 X 15 = 60 Marks)
Answer ALL Questions

2. a) Discuss the principle and Instrumentation of super critical fluid chromatography.

b) Explain about HEPT and plate number.

(**OR)**

c) Describe the principle and applications of gel exclusion chromatography.

d) Write a note on solid phase extraction.

3 a) Discuss the applications of mixed ligand complexes in catalysis and chemical analysis.

b) Describe the factors responsible for stabilization of mixed ligand complexes.

(**OR)**

c) Write about hydrophobic and stacking interactions in mixed ligandcomplexes.

d) Explain the quantitative comparison between binary and ternary complexes.

4 a) Describethe first two principles of Green Chemistry (Prevention and Atom Economy) with examples.

b) Explain about Catalysis and the use of Renewable Feedstocks in Green Chemistry.

(**OR)**

c) Discuss the synthesis of *Vitamin C* by enzymatic route.

d) Explain the use of Supercritical fluids as green solvents.

5 a) Discuss the synthesis of metal nanoclusters by chemical methods.

b) Write the applications of carbon nanotubes in the field of catalysis and chemical sensing.

(**OR)**

c) Write a note on biological nanostructures.

d) Describe about Buckminsterfullerene i.e., C_{60}molecule.

★★★★★

503/AUG23/IV-D(E)(A)

FACULTY OF SCIENCE

M. Sc (CHEMISTRY) IV SEMESTER (CBCS) EXAMINATIONS AUG/SEPT 2023

ADVANCED NATURAL PRODUCTS

(ORGANIC CHEMISTRY SPECIAL)

PAPER – IV (A)

Time: 3 Hrs] **[Max. Marks: 80**

SECTION – A (4 X 5 = 20 Marks)

1. **Write short notes on the following**

a) Chemical degradation method

b) Herzig meyer method

c) NOESY

d) Stereoselective synthesis

SECTION - B (4 X 15 = 60 Marks)
Answer ALL the Questions

2. a) What is Acetate-Malonate pathway? Give the biosynthesis of any two aromatic compounds.
b) Give the biosynthesis of amino acids by Shikimic acid pathway.

(OR)

c) Outline the biosynthesis of mono and sesqui terpenoids through Mevalonic acid pathway.
d) Describe the various methods to determine the biosynthetic mechanism.

3. a) Discuss the structures of Quininic acid and Meroquinine in the structure of Quinine.
b) How do you determine the structure of Atropine? Explain.

(OR)

c) Write the structures of Morphine, Codiene and Thebaine. Explain how the structure of Morphine is determined.
d) Determine the structure of Reserpic acid.

4. a) Discuss the NOESY Technique.
b) Explain the HETEROCOSY of Strictanol.

(OR)

c) Give the spectral study of Menthol.
d) Describe the HOMOCOSY of Geranoil.

5. a) Outline Corey's synthesis of Prostaglandins.
b) Discuss the Sharpless synthesis of L-Hexoses

(OR)

c) Explain Danishefsky synthesis of Indolizomycin
d) Write a note on Takasago synthesis of Menthol.

★★★★★

FACULTY OF SCIENCE

M. Sc. (CHEMISTRY) IV SEMESTER (CBCS) EXAMINATIONS AUG/SEPT 2023

COMPUTATIONAL CHEMISTRY AND ITS APPLICATIONS

(PHYSICAL CHEMISTRY SPECIAL)

PAPER - IV

Time: 3 Hours] **[Max. Marks: 80**

SECTION - A (4 X 5 = 20 marks)

1. Answer all the Questions

a) How do you perform conformational analysis of ethane?

b) Explain the basic elements of monte carlo method.

c) Give an account on Craig plot.

d) Explain the Wunsch Global sequence analysis.

SECTION – B (4 X 15 = 60 marks)

Answer ALL the Questions

2. a) What is molecular Mechanics? Explain the four main kinds of terms used in the molecular mechanics force field. What are its advantages and disadvantages?

b) Write a note on Cartisian and co-ordinates.

OR

c) Explain the concept of molecular modelling study for single and reaction of molecule.

d) How do you study the hydrogen bonding interactions using molecular mechanics principles?

3. a) Derive an expression for force field equation for energy minimization.

b) Give a brief note on molecular dynamics simulations.

OR

c) Explain the steepest descent and conjugate gradient minimization methods.

d) Discuss about geometry optimization procedure in detail.

4 a) Discuss the influence of various steric factors in designing a lead molecule.

b) Explain cluster significant analysis.

OR

c) Explain the partial least squares method. What are its applications in drug design?

d) Describe the Hansch analysis and its applications.

5 a) Explain briefly about local and multiple sequence alignment.

b) Write a note on De novo ligand design.

OR

c) How energy minimization method is useful in identification of active site.

d) Give an account on docking algorithms.

★★★★★

009/AUG23/IV-E(B)

FACULTY OF ARTS
M A (ENGLISH) IV SEMESTER (CBCS) EXAMINATIONS AUG/SEPT 2023
SOUTH ASIAN LITERATURE
PAPER – V (B)

TIME: 3 HRS] **[MAX. MARKS: 80**

SECTION - A (4 X 5 = 20 Marks)

1 **Answer ALL the questions**

a Migration and Exile

b Write a short note on Imtiaz Dharker's *Purdah?*

c Discuss the role of Sailor in Michael Ondaatje Anil's *Ghost?*

d Write a short note on Manjushree Thapa's Educating *the Influential Foreigner?*

SECTION - B (4 X 15 = 60 Marks)
Answer ALL questions

2 A Write an essay on South Asian Diaspora?

B Write an essay on Ethnicity and Gender?

3 A Write an essay on the thematic concerns of Jean Arasanaygam's poem prescribed for your study?

OR

B Summarize the main views of Kaiser Haq's poems prescribed for your study?

4 A Write an essay on the significance of the title *Ice- Candy Man* by Bapsi Sidhwa ?

OR

B Write an essay on the use of irony in Khaled Hosseini's *The Kite Runner?*

5 A Write a critical analysis of Hanif Kureishi's *Something Given: Reflections on Writing?*

OR

B Write an essay on the main theme of Romesh Gunesekera's *A long, slow descent into hell?*

★★★★★

009/AUG23/IV-E(C)

FACULTY OF ARTS
M.A. (ENGLISH) IV SEMESTER (CBCS) EXAMINATIONS AUG / SEPT 2023
GENDER STUDIES
PAPER – V (B)

Time: 3 Hours] **[Max. Marks: 80**

SECTION - A (4 X 5 = 20 Marks)

1. Answer ALL the following questions

A. Examine "Queer theory" critically

B. Discuss the poem "Phenomenal Women"

C. Sketch the character of Arjie Chelvaratnam

D. Discuss the central idea of Michel Foucault's *The History of Sexuality*

SECTION - B (4 X 15 = 60 Marks)
Answer ALL the Questions

2. (A) Discuss femininity and masculinity.

(OR)

(B) Examine the relationship among knowledge, power and power.

3. (A) Critically comment on Agha Shahid Ali's "Leaving your City"

(OR)

(B) Summarise the poem "The Bee Keeper."

4. (A) Discuss gender discrimination and perspectives of Mishima's *Confessions of a Mask.*

(OR)

(B) "Shyam Selvadurai's *Funny Boy* is a unique text". Discuss.

5. (A) Explain the ideological notions of *Disidentification.*

(OR)

(B) Examine Kosofsky's *The Epistemology of the Closet* critically.

★★★★★

FACULTY OF ARTS

M.A (Urdu) IV Semester Examination (CBCS) AUG/SEPT 2023

Paper - V(B)

پانچواں پرچہ : سوانح عمری Sawaneh Umri

[Time : 3 Hours] **Answer ALL the questions** **Max Marks : 80**

(حصہ الف)

نوٹ: تمام سوالات حل کیے جائیں۔ ہر سوال کے چار نشانات ہیں۔ ہر جواب پندرہ سطروں میں تحریر کیا جائے۔ **(5 x 4 = 20)**

1. ''آپ بیتی'' سے کیا مراد ہے؟ مثالوں سے واضح کیجیے۔
2. سوانح عمری کے سیاسی پہلوؤں پر روشنی ڈالیے۔
3. شہر بانو کی خودنوشت ''بیتی کہانی'' پر اظہار خیال کیجیے۔
4. راشد الخیری کی سوانح نگاری پر تبصرہ کیجیے۔
5. حالؔی اور غالبؔ کے تعلقات پر اظہار خیال کیجیے۔

(حصہ ب)

نوٹ: تمام سوالات حل کیے جائیں۔ ہر سوال کے بارہ نشانات مختص ہیں۔ ہر سوال کا جواب چار صفحات سے زیادہ نہ ہو **(5 x 12 = 60)**

6. (A) جوش کی خودنوشت ''یادوں کی برات'' کا تنقیدی جائزہ لیجیے۔

یا

(B) ''یادگار غالب'' کے ادبی اور فنی محاسن پر روشنی ڈالیے۔

7. (A) اردو کے اہم سوانح نگاروں پر جامع نوٹ لکھیے۔

یا

(B) شبلی کی سوانح نگاری کا تنقیدی جائزہ لیجیے۔

8. (A) اردو میں سوانح نگاری کی ابتدا کے بارے میں آپ کیا جانتے ہیں؟ تحریر کیجیے۔

یا

(B) جعفر تھانیسری کی خودنوشت ''کالا پانی'' کی امتیازی خصوصیات بیان کیجیے۔

9. (A) سوانح عمری کی اہمیت کے مذہبی اور تاریخی زاویوں پر روشنی ڈالیے۔

یا

(B) سوانحی ادب کے سماجی اور تہذیبی حوالوں پر اظہار خیال کیجیے۔

10. (A) سوانح نگاری کی مختلف اقسام کا تعارف کرائیے۔

یا

(B) سوانح عمری کے فن اور تکنیک کا جائزہ لیجیے۔

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313/AUG23/IV-E(B)

FACULTY OF SCIENCE
M A (ECONOMICS) IV SEMESTER (CBCS) EXAMINATIONS AUG/SEPT 2023
TELANGANA ECONOMY
PAPER – V (B)

Time: 3 Hrs] **[Max. Marks: 80**

SECTION – A (4 X 5 = 20 Marks)

1. **Answer all the questions**
   a. Define growth.
   b. Write a short note on Agriculture Sector.
   c. Write a note on Zamindari System.
   d. Define Industry.

SECTION – B (4 X 15 = 60 Marks)

Answer ALL the Questions

2. A) Examine the Relationship between Growth and Development.

OR

B) Explain the Agriculture and allied sectors in Telangana State.

3. A) What are the Sources of Irrigation?-Explain.

OR

B) Discuss the Problems of Dry land agriculture in India.

4. A) Explain the Land reforms in Telangana State.

OR

B) What are the problems with abolition of intermediaries in India?-Discuss

5 A) What is the Structure and Growth of Industrial Sector?-Describe.

OR

B) Explain the Structure and Growth of Service sector.

★★★★★

FACULTY OF ARTS

M. A (TELUGU) IV SEMESTER (CBCS) EXAMINATIONS AUG/SEPT 2023

జానపద విజ్ఞానం – సాహిత్యం

PAPER – V (A)

TIME: 3 HRS] **[MAX. MARKS: 80**

SECTION - A (4 X 5 = 20 మార్కులు)

అన్ని ప్రశ్నలకు జవాబులు వ్రాయండి

1 A జానపద విజ్ఞానం – నిర్వచనాలు

B వలస వాదం

C చిందు ఎల్లమ్మ

D తెలంగాణ పల్లె పాటలు

SECTION - B (4 X 15 = 60 మార్కులు)

అన్ని ప్రశ్నలకు జవాబులు వ్రాయండి

2 A జానపద విజ్ఞాన సేకరణ – పరిరక్షణను వివరించండి.

లేదా

B జానపద విజ్ఞానంలోని వస్తు సంస్కృతిని తెల్పండి.

3 A జానపద కథాగేయ లక్షణాలను రాయండి.

లేదా

B శ్రామిక గేయాలను సంక్షిప్తంగా వివరించండి.

4 A తెలంగాణలోని సామెతలను విశ్లేషించండి.

లేదా

B పొడుపు కథల వర్గీకరణను రాయండి.

5 A బతుకమ్మ పాటల సారాంశాన్ని వివరించండి.

లేదా

B బాణావతి కథ వల్ల కలిగే సామాజిక ప్రయోజనాన్ని విశ్లేషించండి.

★★★★★

015/AUG23/IV-E(C)(N)

FACULTY OF ARTS
M. A (TELUGU) IV SEMESTER (CBCS) EXAMINATIONS AUG/SEPT 2023
తెలుగులో పరిశోధన

PAPER - V (C)

TIME: 3 HRS] **[MAX. MARKS: 80**

SECTION - A (4 X 5 = 20 మార్కులు)

1 **అన్ని ప్రశ్నలకు జవాబులు వ్రాయండి**

a పరిశోధన నిర్వచనాలు

b పరిశోధన సామగ్రి సేకరణ

c బియన్ శాస్త్రి

d కాకతీయ విశ్వ విద్యాలయ తొలినాటి పరిశోధనలు

SECTION - B (15 X 4 = 60 మార్కులు)

అన్ని ప్రశ్నలకు జవాబులు వ్రాయండి

2 A పరిశోధన లక్షణాలను తెల్పి దాని లక్ష్యాలను వివరించండి

లేదా

B పరిశోధన ప్రణాళికను తెల్పి ఆధార గ్రంథ సూచి తయారీని వివరించండి

3 A పరిశోధన విషయ సేకరణలో పత్రికల ప్రాధాన్యాన్ని వివరించండి

లేదా

B పరిశోధనలో ఉల్లేఖనాలు, పాద సూచికల రీతిని, ప్రాధాన్యాన్ని వివరించండి

4 A శాసన సాహిత్య పరిశోధనలో మల్లంపల్లి సోమశేఖర శర్మ కృషిని వివరించండి

లేదా

B గ్రంథ పరిష్కరణ లో శ్రీరంగాచార్య కృషిని వివరించండి

5 A మద్రాసు విశ్వవిద్యాలయంలోని పరిశోధన వికాసాన్ని వివరించండి

లేదా

B వేంకటేశ్వర విశ్వవిద్యాలయంలోని ప్రక్రియ పరిశోధన వికాసాన్ని వివరించండి

★★★★★

FACULTY OF ARTS
M A (TELUGU) IV SEMESTER (CBCS OLD) EXAMINATIONS AUG/SEPT 2023
తెలుగులో పరిశోధన

PAPER – V (B)

TIME: 3 HRS] **[MAX. MARKS: 80**

విభాగం – A (5 X 4 = 20 Marks)

1 **ఈ క్రింద ప్రశ్నలన్నింటికి సమాధానలను వ్రాయుము**

A పరిశోధన

B పరిశోధనాంశ ప్రణాళిక

C పాదసూచికలు

D జానపద పరిశోధనలు

E తెలంగాణ పరిశోధన

విభాగం - A(5 X 12 = 60 Marks)

ఈ క్రింద ప్రశ్నలన్నింటికి సమాధానలను వ్రాయుము

2 A పరిశోధనను నిర్వచించి, ప్రయోగాలను తెలుపండి.

OR

B పరిశోధనలో ఆధార గ్రంథ సూచి రీతిని, ప్రాధాన్యాన్ని వివరించండి.

3 A పరిశోధనాంశాలను విపులంగా తెలుపండి.

OR

B పరిశోధన విషయ సేకరణలో పత్రికల ప్రాధాన్యాన్ని వివరించండి.

4 A సిద్ధాంత గ్రంథ స్వరూపాన్ని వివరించి, ఉల్లేఖనాల ప్రాధాన్యతను వివరించండి.

OR

B పరిశోధనలో అధ్యాయాల విభజన ప్రాముఖ్యాన్ని, సిద్ధాంత గ్రంథ శైలీని వివరించండి.

5 A జానపద సాహిత్య పరిశోధనలో బిరుదురాజు రామరాజు మార్గాన్ని వివరించండి

OR

B గ్రంథ పరిష్కరణ లో వేటూరి ప్రభాకర శాస్త్రి కృషిని వివరించండి.

6 A శేషాద్రి రమణ కవుల పరిశోధనా కృషిని తెలుపండి.

OR

B మలయశ్రీ పరిశోధన ప్రత్యేకతలను తెలుపండి

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FACULTY OF COMMERCE
M. Com (GEN) IV SEMESTER (CBCS) EXAMINATIONS AUG/SEPT 2023
STRATEGIC FINANCIAL MANAGEMENT
PAPER – V (A)

TIME: 3 HRS] **[MAX. MARKS: 80**

SECTION - A (5 X 4 = 20 Marks)

1 **Answer ALL Questions**

A Initial Public Offer
B Convertible Debentures
C Free cash flows
D Transfer pricing
E Leveraged buyout

SECTION – B (5 X 12 = 60 Marks)
Answer ALL Questions

2 A Explain role of strategic financial planning in enhancing the market efficiency.

OR

B Write a note on the regulatory frame work of rights issue.

3 A Explain the role of data analysis in designing the capital structure of a firm

OR

B The ZBB Ltd needs Rs 5, 00,000 for construction of a new plant. The following three financial plans are feasible:

i. The company may issue 50,000 equity shares of Rs 10 per share.
ii. The company may issue 25,000 equity shares at Rs 10 per share and 8% Debentures of Rs 100 each.
iii. The company may issue 25,000 equity shares of Rs 10 per share and 10% Preference shares of Rs 100 per share.

If the company's EBIT are Rs 40,000, Rs 80,000 and Rs 1, 20,000, what are the EPS under each of the three financing plans? Which alternative would you recommend and why? Assume tax at 35 per cent and P/E ratio of 10 equity plan, 9 in equity + preference plan and 8 in equity + debt plan.

4 A What are the guidelines for corporate valuation

OR

B Balance sheet of a corporate as on March 31, current year is as follows.

(Amount in Rs Crore)

Liabilities		Assets	
Equity share capital (1Crore shares)	200	Plant and Machinery	250
Reserve and surplus	180	Land & Building	150
12% Debentures	150	Inventory	80
Total creditors	35	Receivables	60
Other current liabilities	15	Other current assets	40
	580		580

(Contd…..)

The market value of its assets as assessed by professional value is as follows

Plant and Machinery Rs. 180 Crore,
Land and building Rs. 300 crores.

The current resale value of the remaining assets is as per their book value. You are required to compute the value of equity share on the basis of net assets method (book value and market value).

5 A What are the methods and key premises of value based management?

OR

B Following is the condensed income statement of a firm for the current year

	(Rs. Lakh)
Sales revenue	Rs. 500.00
Less: Operating costs	300.00
Less: Interest costs	12.00
Earnings before taxes	188.00
Less: Taxes (0.40)	75.20
Earnings after taxes	112.80

The firm's existing consists of Rs. 150 lakh equity funds, having 15 per cent cost and of Rs. 100 lakhs 12 per cent debt. Determine the economic value added during the year.

6 A Give a brief account of conceptual frame work of value based management.

OR

B Explain the problems in implementation of financial restructuring.

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FACULTY OF COMMERCE
M COM (GEN) IV SEMESTER (CBCS) EXAMINATIONS AUG/SEPT 2023
BANKING OPERATIONS AND PROCEDURES
PAPER – V (B)

TIME: 3 HRS] **[MAX. MARKS: 80**

SECTION - A (5 X 4 = 20 Marks)

1 **Answer ALL Questions**

A What is meant by mutual fund?

B Describe the banker as at trustee.

C Saving Account Vs Current Account

D Describe the status of married women as special type of bank customer.

E What do you mean by negotiable instrument?.

SECTION – B (5 X 12 = 60 Marks)

Answer ALL Questions

2 A Evaluate the role played by commercial banks as merchant bankers in India.

OR

B Will you support the commercial banks to do insurance business? Substantiate your response.

3 A What are the different rights of a banker? Explain in detail.

OR

B What are the different obligations of a banker? Explain in detail.

4 A Write in detail about (i) Non residents accounts scheme (ii) Foreign currency accounts scheme

OR

B Explain in detail about various accounts offered by banks to their customers.

5 A Discuss in detail about the legal Provisions regarding guardianship of aMinor and lunatic.

OR

B Explain the legal provisions relating to joint accounts operations such as partnership and clubs.

6 A Explain the salient features of negotiable instruments act.

OR

B Write in detail about (i) Cheque (ii) Bill of Exchange

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FACULTY OF COMMERCE
M.COM.(FA) IV SEMESTER (CBCS) EXAMINATIONS AUG/SEPT 2023
STRATEGIC FINANCIAL MANAGEMENT
PAPER - V

TIME: 3 HRS] **[MAX. MARKS: 80**

SECTION-A (5 X 4 = 20 Marks)

1 **Answer ALL Questions**

A What is Initial Public Offer?

B What do you mean by Capital Structure Planning?

C What is corporate valuation?

D What is the meaning Economic Value Added?

E What do you mean by Corporate Restructuring?

SECTION – B (5 X 12 = 60 Marks) Answer ALL Questions

2 A What is Strategic Financial planning? Explain the scope and objectives of Strategic Financial planning.

OR

B Explain in detail about Right issue, Value of Right and Private placement

3 A Explain in detail the EBIT and EPS Analysis with an example.

OR

B A Ltd. Has a share capital of Rs .1,00,000 divided into share of Rs. 10 each. It has a major expansion program requiring an investment of another Rs. 50,000. The Management is considering the following alternatives for raising this amount :
Issue of 5,000 equity shares of Rs. 10 each
Issue of 5000, 12% preference shares of Rs. 10 each
Issue of 10% debentures of Rs. 50,000
The company's present Earnings Before Interest and Tax (EBIT) are Rs. 40,000 per annum subject to tax @ 50%. You are required to calculate the effect of the above financial plan on the earnings per share presming:
(a) EBIT continues to be the same even after expansion
(b) EBIT increases by Rs. 10,000

4 A What are the approaches to corporate valuation? Explain the guidelines for corporate valuation

OR

B From the following details of X ltd company balance sheet and income statement:

Particulars	2020 (Million)	2019 (Million)
Depreciation and Amortization	30	20
Current assets	300	200
Fixed assets	500	400
Accounts payable	60	60
Short term debt	80	60
Long term debt	60	40

The company's net income for the year 2020 is Rs. 200 million. Find out the free cash flow to equity of the firm

5 A What is value based management? Explain the key premises of value based management.

OR

B Raju international earns a return on equity of 25 percent. Its dividend payout ratio is 0.40. Equity share holders of Raju require a return of 18 percent. The book value per share is Rs. 50.
(a) What is the market price per share, according to the Marakon model?
(b) if the return on equity falls to 22 percent, what should be the payout ratio to ensure that the market price per share remains unchanged?

6 A Explain in detail about the Spin off, Split off and Leveraged Buyout.

OR

B What is Financial Restructuring? Describe the problems in implementing Corporate Restructuring Policies.

410/AUG23/IV-E

FACULTY OF COMMERCE
M.COM (CA) IV SEMESTER (CBCS) EXAMINATION AUG/SEPT 2022
DATA ANALYSIS WITH SPSS
PAPER - V

TIME: 3 HRS] **[MAX. MARKS: 80**

SECTION - A (5 X 4 = 20 Marks)

1 **Answer ALL Questions**

A Specify the Structure of Data View.

B How to Record Existing Variables?

C What is Cross Tabulation? Explain.

D What are Sample Tests? Differentiate Independent Sample Test & Related Sample Test.

E What is Factor Analysis?

SECTION – B (5 X 12 = 60 Marks)
Answer ALL Questions

2 A Describe the Menu bar in SPSS Window.

OR

B How to Manage Data in a Data File using SPSS.

3 A How to find Mean. Median and Mode using SPSS?

OR

B Explain the process of Creating a Histogram.

4 A What are different Significant Levels? Explain the Concept of P Value.

OR

B How to compare Means through Bi-Variate Analysis?

5 A Describe Two Related Sample Tests.

OR

B Explain K-Sample Median Test.

6 A Describe Bartlett's Test of Sphericity.

OR

B Describe Component Transformation Matrix, and Rotated Component Matrix.

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CBCS R-20NEW

505/AUG23/IV-E(A)(R20)

FACULTY OF SCIENCE

M.Sc. (MATHEMATICS) IV SEM (CBCS R-20 NEW) EXAMINATIONS AUG/SEPT 2023

NUMERICAL ANALYSIS

PAPER – V (A)

TIME: 3 HRS] **[MAX. MARKS: 100**

SECTION - A (8 X 5 = 40 Marks)

1 **Answer ALL the questions.**

a Define algebraic and transcendental equations and also provide an example to each.

b Explain the iterative scheme to find the roots of the system $x = F(x, y)$ and $y = G(x, y)$, and its sufficient conditions for the convergence.

c Discuss the weighted least squares approximation to fit a curve.

d Derive the normal equations to fit a straight line of the form $y = a + bx$.

e From the Taylor series for $y(x)$, calculate $y(0.1)$ correct to three decimal places if $y(x)$ satisfies $y' = x - y^2,\ y(0) = 1$.

F What is meant by predictor-corrector methods? Explain it.

g Derive three level difference schemes for the solution of one-dimensional wave equation.

h Write Jacobi's and Gauss-Seidel schemes for $u_{xx} + u_{yy} = 0$.

SECTION-B (4 X 15 = 60 Marks)

Answer ALL the questions.

2 A Describe briefly Muller's method and use it to find the root between 2 and 3 of the equation $x^3 - 2x - 5 = 0$.

OR

B Find a real root of the equations $y^2 - 5y + 4 = 0$ and $3yx^2 - 10x + 7 = 0$ using Newton-Raphson method.

3 A Find the values of a, b, c so that $Y = a + bx + cx^2$ is the best fit to find the data:

x	0	1	2	3
y	2	5	8	11
w	1	1	1	1

Using (a) least square approach, (b) weighted least square approach. Also, compare the obtained results and provide your comments on it.

OR

B Using the method of least squares, derive the normal equations fit a curve of the form $y = \dfrac{x}{a + bx}$ and hence find the best fit to the data: (3, 7.148), (5, 10.231), (8, 13.509), (12, 16.434)

4 A Given the differential equation $y' = \dfrac{x^2}{1 + y^2},\ y(0) = 0$. Use Picard's method to obtain $y(x)$ for 0.25, 0.5 and 1 correct to three decimal places.

OR

B Given the initial value problem defined by $y' = y^2 + xy,\ y(0) = 1$. Find the values of $y(0.1),\ y(0.2)$ and $y(0.3)$ by Runge-Kutta fourth order formula. Use these values to compute $y(0.4)$ by Adams-Moulton method.

(Contd.....)

5 A Solve $\nabla^2 u = 0,\ u(x,\ 0) = 0,\ u(0,\ y) = 5,\ u(x,\ 15) = 0,\quad u(15,\ y) = 50$ with $h = 5$ by finite difference Method.

OR

B Solve the heat conduction problem

$u_t = u_{xx},,$

subject to $u(x,0) = \sin(\pi x)$ for $0 \le x \le 1$

and $u(0,t) = 0,\ u(1,t) = 0$ for $t > 0$

Use Bender-Schmidt's and Crank-Nicolson formulae to compute the value of $u(0.6,\ 0.4)$.

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FACULTY OF SCIENCE

M.Sc. (MATHEMATICS) IV SEM (CBCS R-19 OLD) EXAMINATIONS AUG/SEPT 2023

ADVANCED COMPLEX ANALYSIS

TIME: 3 HRS] **[MAX.MARKS: 100**

SECTION-A (4 X 5 = 20 Marks)

1 **Answer ALL the questions.**

a Define the convergence sequence and series.

b Determine all zeros of $e^{e^z}=1$, if any.

c Explain the concept of Jordan's lemma.

d What is meant by linear transformations? Discuss it.

SECTION-B (4 X 20 = 80 Marks) Answer any ALL the questions

2 **Answer any TWO of the following**

A State and prove the Taylor's theorem.

B Show that when $0<|z|<4$, $\frac{1}{4z-z^2}=\frac{1}{4z}+\sum_{n=0}^{\infty}\frac{z^n}{4^{n+2}}$.

C Find the Laurent series that represents the function $f(z)=z^2\sin\left(\frac{1}{z^2}\right)$ in the domain $0<|z|<\infty$.

D If z_1 is a point inside the circle of convergence $|z-z_0|=R$ of a power series $\sum_{n=0}^{\infty}a_n(z-z_0)^n$, then show that the series must be uniformly convergent in the closed disk $|z-z_0|\le R_1$, where

3 **Answer any TWO of the following**

A (a) Define residue at a finite point.

(b) Find the residue of $f(z)=\frac{z^3}{(z^2-1)}$ as $z\to\infty$. [3+7=10 Marks]

B Discuss the singularities of $f(z)=\frac{z^3(z^2-1)(z-2)^2}{\sin^2(\pi z)}e^{1/z^2}$. Classify which of these are poles, removable singularities and essential singularity.

C State and prove Cauchy residue theorem.

D Evaluate $\int_C\left(\frac{1}{z}\right)\cosh\left(\frac{1}{z}\right)dz$, where c is $|z|=1$.

4 **Answer any TWO of the following**

A Calculate the value of $\int_0^{\infty}\frac{\ln x}{(x^2+4)^2}dx$ using the contour integration.

B Using the contour integration, compute $\int_0^{\pi}\frac{1}{1-2a\sin\theta+a^2}d\theta$, where $-1<a<1$.

C State and prove argument principle.

D Find the function $f(t)$ that corresponds to its Laplace transform $F(s)=\frac{s}{(s^2+a^2)^2}$, $a>0$

(Contd....)

5 **Answer any TWO of the following**

A Discuss about the transformation $w = \sin z$ in detail.

B Find the image of the region $x > 1,\ y > 0$ under the transformation $w = \frac{1}{z}$.

C Determine the linear fractional transformation that sends the points $z = 0, -i, 2i$ into the points $w = 5i, \infty, -i/3$ respectively. Hence find the image of $|z| < 1$ under this transformation.

D Describe the curve, on a Riemann surface for $z^{1/2}$, whose image is the entire circle $|w| = 1$ under the transformation $w = z^{1/2}$.

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FACULTY OF SCIENCE

M.Sc. (MATHEMATICS) IV SEM (CBCS R-16 OLD) EXAMINATIONS AUG/SEPT 2023

ADVANCED COMPLEX ANALYSIS

TIME: 3 HRS] **[MAX. MARKS: 80**

SECTION - A (4 X 5 = 20 Marks)

1 **Answer ALL the questions.**

a Define sequence of complex numbers. Verify whether the sequence $\left\{\frac{1}{n^3}+i\right\}_{n=1}^{\infty}$ is convergent or not?

b Determine all zeros of $e^z=1+i$, if any.

c Determine the number roots of $e^z-4z^n+1=0$ within $c:|z|=1$.

d Define linear fractional transformation. Write various forms of it.

SECTION - B (4 X 15 = 60 Marks) Answer ALL the questions.

2 A (a) State and prove the Taylor's theorem.

(b) Show that when $0<|z|<4$, $\frac{1}{4z-z^2}=\frac{1}{4z}+\sum_{n=0}^{\infty}\frac{z^n}{4^{n+2}}$.

OR

B (a) State and prove the Laurent theorem.

(b)Use multiplication of series to prove that $\frac{e^z}{z(z^2+1)}=\frac{1}{z}+1-\frac{z}{2}-\frac{5}{6}z^2+\ldots,\ 0<|z|<1$.

3 A (a) Discuss the singularities of $f(z)=\frac{z^3\left(z^2-1\right)(z-2)^2}{\sin^2(\pi z)}e^{1/z^2}$. Classify which of these are poles, removable singularities and essential singularity.

(b) Determine the order of the pole at $z=0$ for $f(z)=\frac{z}{\left(\sin z-z+z^3/3!\right)^2}$.

OR

B (a) State and prove Cauchy residue theorem.

(b) Use it to evaluate $\int_C \frac{\log_e z}{(1+z)^2}dz$, where C is $|z+1|=\frac{1}{2}$.

4 A Determine the value of $\int_{-\infty}^{\infty}\frac{x\sin x}{x^2+2x+2}dx$ using the contour integration.

OR

B (a) State and prove argument principle.

(b) Evaluate $\int_C \frac{f'(z)}{f(z)}dz$, where $c:|z|=4$ and $f(z)=\frac{\left(z^2+2\right)^3}{\left(z^3+2z^2+2z\right)^4}$ inside the circle $|z|=10$.

5 A (a) Discuss about the transformation $w=\frac{1}{z}$ in detail.

(b) Find the image of $0<x<2\pi,\ 1<y<2$ in the z-plane under the transformation $w=\sin z$.

OR

B (a) Determine the linear fractional transformation that sends the points $z=0,\ 1,\infty$ onto the points $w=-1,\ -i,1$ respectively.

(b) Describe a Riemann surface for the multiple-valued function $f(z)=\left(\frac{z-1}{z}\right)^{1/2}$