FACULTY OF SOCIAL SCIENCES
M.A (ECONOMICS) SEMESTER-I (CBCS) EXAMINATIONS, FEB 2025
MICRO ECONOMICS - I
PAPER - I

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

SECTION - A (5 X 4 = 20 Marks)

1   **Answer ALL the questions**

    a   Define Price Effect

    b   What is Iso-Quant Curve?

    c   Define Market.

    d   Write a short note on Monopoly Power.

    e   Briefly explain the Price Leadership.

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

2   A   What is the difference between Slutsky and Hicksian compensation?-Analyze

OR

   B   Explain the Consumer Surplus and its implications.

3   A   Describe the Cobb-Douglas Production Function.

OR

   B   Examine the Modern Theory of Costs in Short-Run.

4   A   Discuss the Price and Output Determination under Perfect Competition.

OR

   B   Illustrate the Short Run and Long run equilibrium of the firm and industry under Perfect competition.

5   A   Examine the Short and long run equilibrium under Monopoly.

OR

   B   Write about the Price and Output Determination under Monopolistic Competition.

6   A   Describe the Duopoly Models.

OR

   B   What is Oligopoly? Explain the features of Oligopoly.

★★★★★

FACULTY OF SOCIAL SCIENCES
M. A (SOCIOLOGY) I SEMESTER (CBCS) EXAMINATIONS FEB 2025
PRINCIPLES OF SOCIOLOGY
PAPER - I

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

SECTION - A (5 X 4 = 20 Marks)

1   **Answer ALL the questions**

a   Scope of Sociology

b   Associative processes

c   Kinship

d   Social Control

e   Characteristics of Caste

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

2   A   Explore the evolution of Sociology as a scientific discipline. Write about its methods and theoretical perspectives.

OR

B   Write about the Nature and Scope of Sociology and relate to other social sciences.

3   A   Discuss the elements of social structure and social system. Explain how they maintain Social Order.

OR

B   Analyze the relationship between society and the individual, focusing on the influence of heredity and environment on personality development.

4   A   Discuss the relationship between religion and other social institutions, such as politics and economy, and explore the implications of religious diversity in contemporary societies.

OR

B   Discuss the advantages and disadvantages of free-market and planned economies, considering factors such as efficiency, equity, and sustainability.

5   A   Explain the concept of property and compare the economic systems of simple and complex societies.

OR

B   Discuss the concept of civil society and its role in governance with appropriate examples.

6   A   Discuss the functions of social stratification in society and analyze how it impacts individuals' opportunities and life chances.

OR

B   Analyze the theories and factors of social change. Discuss how societal norms, technology, economic factors, and cultural shifts contribute to social change

★★★★★

FACULTY OF SOCIAL SCIENCES
M. S.W I SEMESTER (CBCS) EXAMINATIONS, FEB 2025
SOCIAL WORK PROFESSION, PHILOSOPHY AND IDEOLOGY
PAPER - I

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

SECTION - A (5 X 4 =20 Marks)

1   **Answer ALL the questions**

a   Voluntary Action

b   Professional Social Work

c   Developmental goals

d   Functions of social work

e   Child Welfare

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

2   A   Give an overview of historical development of Professional Social Work in India and UK.

OR

B   Write in detail about the functions and goals of social work practice.

3   A   Explain the contribution of social reformers in India during 20th century?

OR

B   Write in detail about the traditional social service practices as per our Indian culture.

4   A   Discuss the basic principles, values and ethics associated with the practice of professional social work.

OR

B   What is the contribution of Gandhian ideology to the Subject of Social Work.

5   A   Explain about the practice of Social work in Industries and Hospitals.

OR

B   Discuss about the reformation of prisoners through correctional social work practice.

6   A   Define Medical and Psychiatric Socia Work in India and explain its importance.

OR

B   How does Social work help in understanding Rural and Urban community Development , discuss.

★★★★★

FACULTY OF ARTS
M. A (TELUGU) I SEMESTER (CBCS) EXAMINATIONS, FEB 2025
ప్రాచీన సాహిత్య చరిత్ర అధ్యయనం -1
పేపర్ - I

సమయం: 3 గంటలు]   [గరిష్ట మార్కులు : 80

సెక్షన్ - ఎ (5 X 4 = 20 మార్కులు)

1   **ఈ క్రింది వానిపై లఘు వ్యాఖ్య వ్రాయండి**

ఎ   దివాకర్ల వెంకటావధాని

బి   ద్విపద

సి   మార్గ కవిత్వ లక్షణాలు

డి   పండితారాధ్య చరిత్ర

ఇ   పల్నాటివీరచరిత్ర

సెక్షన్ – బి (5 X 12 = 60 మార్కులు)

అన్ని ప్రశ్నలకు సమాధానాలు వ్రాయండి

2   ఎ   తెలుగు సాహిత్య విభజన అధ్యయన రీతులను చర్చించండి

లేదా

బి   తెలుగు సాహిత్యకారునిగా పింగళి లక్ష్మీకాంతం పద్ధతిని వివరించండి

3   ఎ   పురాణ లక్షణాలను సోదాహరణంగా వివరించండి

లేదా

బి   యక్షగాన లక్షణాలను సోదాహరణంగా చర్చించండి

4   ఎ   కవిత్రయ కాలపు మత రాజకీయ పరిస్థితులను వివరించండి

లేదా

బి   తిక్కన హరిహరనాథ తత్వాన్ని విశదీకరించండి

5   ఎ   శివకవుల దేశికవితారీతులను వివరించండి

లేదా

బి   భాగవతంలో నవవిధ భక్తి తత్వాన్ని వివరించండి

6   ఎ   శ్రీనాథుని అనువాద కవితా రీతిని శృంగారనైషధం ఆధారంగా వివరించండి

లేదా

బి   ప్రబంధకాలపు సామాజిక పరిస్థితులను వివరించండి

★★★★★

FACULTY OF ARTS
M. A. (ENGLISH) I SEMESTER (CBCS-NEW) EXAMINATIONS, FEB 2025
HISTORY OF ENGLISH LANGUAGE AND ENGLISH IN INDIA
PAPER - I

TIME: 3 HRS]   [MAX. MARKS: 80

SECTION-A (5 X 4 = 20 Marks)

1   **Answer ALL the following questions**

A   Theories of Language

B   Write a short note on the spelling in Middle English?

C   What is Polarization?

D   What is Pidgin?

E   English as a Global language

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

2   A   Explain Verner's Law and show how it is related to Grimm's Law?

OR

B   Give an account on the characteristics of Human Languages?

3   A   Write an essay on the characteristics of Old English Period?

OR

B   Write about the evolution of the English language with respect to the developments during the Middle English period?

4   A   Give an account on the characteristics of Modern English?

OR

B   Discuss the change of meaning with reference to evolution of English Language?

5   A   Write an essay on the socio-economic varieties of Language?

OR

B   Write a note on Register as a language variant?

6   A   Write in detail on the history of English language in Pre-Independence Period?

OR

B   Write an essay on the history of English language in Post-Independence Period?

★★★★★

FACULTY OF ARTS
M.A. (ENGLISH) I SEMESTER (CBCS -OLD) EXAMINATIONS FEB 2025
THE ENGLISH LANGUAGE: HISTORY, DESCRIPTION AND PRACTICE
PAPER- I

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

SECTION-A (5 X 4 = 20 Marks)

1 **Answer ALL the following questions**

  A The Norman Conquest

  B Influence of German on English Language

  C Subordination

  D Register

  E What is Functional English?

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

2 A Write an essay on Grimm's Law?

OR

  B What are the major changes took place in the English Language during the Middle English?

3 A What is the influence of French on the English Language? Explain.

OR

  B What are the different processes that took place during semantic change in English Language? Explain.

4 A What is Verb Phrase? Illustrate with examples?

OR

  B What are the different types of Simple Sentence? How do you organise and constitute Simple Sentence?

5 A Write an essay on Style of Language?

OR

  B Give an account of differences in spelling and pronunciation of British English and American English?

6 A Write an essay on Degrees of Comparison with examples?

OR

  B What do you understand by Telephone Etiquette Skills? Explain.

★★★★★

FACULTY OF ARTS

M.A. (Urdu) I - Semester Examination (CBCS)

پہلا پرچہ Paper - I

(تاریخ ادب اردو ابتدا تا 1857ء) Tareekh-e-Adab-e-Urdu

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

Answer All the questions.

(حصہ الف)

نوٹ : تمام سوالات حل کیے جائیں۔ ہر سوال کے چار (4) نشانات ہیں۔ ہر جواب پندرہ (15) سطروں میں تحریر کیا جائے۔   (5 x 4 = 20)

1۔   وسطی ہند آریائی پر مختصر نوٹ لکھیے۔

2۔   اردو زبان کی اشاعت پر محمد تغلق کی پایہ تخت کی تبدیلی سے کیا اثر پڑا؟

3۔   بابا فریدالدین شکر گنج کے اردو کلام پر اجمالی نوٹ لکھیے۔

4۔   میر کی شاعری کی اہم خصوصیات پر روشنی ڈالیے۔

5۔   رجب علی بیگ سرور پر ایک اختصاریہ تحریر کیجیے۔

(حصہ ب)

نوٹ : تمام سوالات حل کیے جائیں۔ ہر سوال کے بارہ (12) نشانات مختص ہیں۔ ہر سوال کا جواب چار (4) صفحات سے زیادہ نہ ہو۔   (5 x 12 = 60)

6۔   (A)   جدید ہند آریائی کے ارتقا پر مفصل نوٹ لکھیے۔   (یا)

(B)   اردو زبان کی ابتدا کے بارے میں محققوں کے نظریات کے اظہار خیال کا جائزہ لیجیے۔

7۔   (A)   امیر خسرو اور ان کے اردو کلام پر اظہار خیال کیجیے۔   (یا)

(B)   شمالی ہند کے صوفیائے کرام کی اردو خدمات کا جائزہ لیجیے۔

8۔   (A)   بہمنی دور میں دکنی شعر و ادب کے ارتقا پر روشنی ڈالیے۔   (یا)

(B)   عادل شاہی دور کے اہم شعرا کے ادبی کارناموں پر روشنی ڈالیے۔

9۔   (A)   دبستانِ لکھنؤ سے کیا مراد ہے؟ اس دبستان کی امتیازی خصوصیات کیا ہیں؟   (یا)

(B)   غالب اور ان کے شامل نصاب دو معاصر شعرا کا تعارف کرائیے۔

10۔   (A)   اردو نثر کی ترقی میں فورٹ ولیم کالج کی خدمات پر روشنی ڈالیے۔   (یا)

(B)   فورٹ ولیم کالج کے باہر اردو میں کون کون سی داستانیں لکھی گئیں تفصیل سے لکھیے۔

★★★

FACULTY OF COMMERCE
M.Com. (ALL STREAMS) I SEM (CBCS – NEW & OLD) EXAMS FEB 2025
BUSINESS ENVIRONMENT
PAPER - I

Time: 3 Hours]   [Max. Marks: 80

SECTION - A (5 X 4 = 20 Marks)

1. **Answer ALL the Questions**

   a) What is Business Environment?

   b) What is Economic Environment?

   c) What is Legislature and Judiciary?

   d) What is Business and culture?

   e) FDI.

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

2. a) What is environmental analysis and explain stages and techniques of environmental analysis?

   (OR)

   b) What is environmental forecasting? Explain steps, and techniques of environmental forecasting.

3. a) What is economic development? Explain the role of government in economic development.

   (OR)

   b) What is technological environment? Explain features and impact of technological transfer.

4. a) Explain the government responsibilities to business and business responsibilities to government.

   (OR)

   b) What is Legal frame work of business? Explain various Regulatory Institutions.

5. a) What is Social audit? Explain Nature, benefits of social audit and Social audit in India.

   (OR)

   b) What is Corporate Governance? Explain Nature and Mechanism of Corporate Governance.

6. a) Explain objectives and organisation structure of World Trade Organization.

   (OR)

   b) Explain benefits and problems of MNCs.

★★★★★

FACULTY OF SCIENCE
M. Sc (BOTANY) I SEMESTER (CBCS) EXAMINATIONS FEB 2025
PHYCOLOGY
PAPER - I

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

SECTION - A (4 X 5 = 20 Marks)

1   **Answer ALL Questions**

   A   Vegetative reproduction in algae

   B   Charophyceae

   C   *Cyclotella*

   D   Algal Blooms

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

2   A   Write a detailed account on the different criteria used for Algal Classification

OR

   B   Explain the diverse habitats of Algae

3   A   Discuss on the general characters and life history of *Microcystis* with suitable diagrams

OR

   B   Describe the general characters and classification of Chlorophyceae

4   A   Discuss on the morphology and life history of *Sargassum* with suitable diagrams

OR

   B   Write in detail on the economic importance of Rhodophyceae

5   A   Discuss on the role of algae as food and biofertilizers

OR

   B   Explain the role of algae in industry

★★★★★

FACULTY OF SCIENCE
M. Sc (COMP SCI) I SEMESTER (CBCS) EXAMINATIONS FEB 2025
DISCRETE MATHEMATICS
PAPER - I

TIME: 3 HRS]   [MAX. MARKS: 80

SECTION - A (4 X 5 = 20 Marks)

1   **Answer ALL the questions**

   a   What is Mathematical induction?

   b   What are Recurrence Relations?

   c   Define Directed Graphs.

   d   Write a short note on Network Flows.

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

2   A   Construct the Truth tables for the following:

(a) $[(p \vee q) \wedge (\sim r)] \leftrightarrow q$.
(b) $(p \vee q) \wedge ((\sim p) \vee (\sim r))$.
(c) $\{(p \wedge q) \vee (\sim p \wedge r)\} \vee (q \wedge r)$.

OR

   B   Use De Morgan's Law to prove that the complement of

$$(\bar{A} \cap B) \cap (A \cup \bar{B}) \cap (A \cup C)$$

is

$$(A \cup \bar{B}) \cup (\bar{A} \cap (B \cup \bar{C})).$$

3   A   What are generating Functions? Build a Generating Function for a_r = the number of integral solutions to the equation $e_1 + e_2 + e_3 = r$ if:

(a) $0 \le e_i \le 3$ for each i.
(b) $2 \le e_i \le 5$ for each i.
(c) $0 < e_i$ for each i.

OR

   B   What are Inhomogeneous Recurrence Relations? Write the general form of a particular solution to the following:

(a) $a_n - 9a_{n-1} + 14a_{n-2} = 5(3^n)$.
(b) $a_n - 9a_{n-1} + 14a_{n-2} = 7^n$.
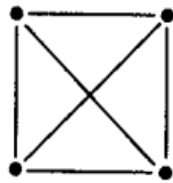(c) $a_n - 9a_{n-1} + 14a_{n-2} = 3n^2$.

(Contd……..)

4   A   Explain in detail about Paths and Closures. Draw a digraph with 5 vertices that has 4 strongly connected components, 2 weakly connected components and 3 unilaterally connected components.
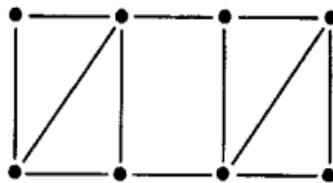
OR

B   What is Searching? Explain the implementation of Binary Search algorithm on the sequence{1,3,3,4,7,12,13,15} searching for 12.

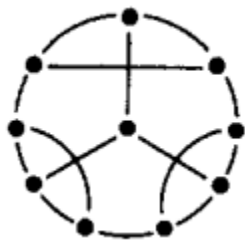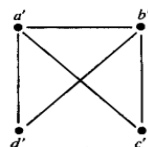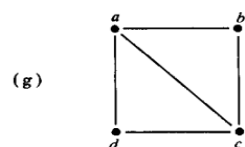5   A   What are Hamiltonian Graphs? Find a Hamiltonian Cycle in each of the following Graphs:

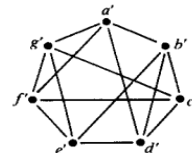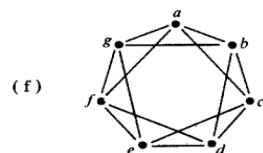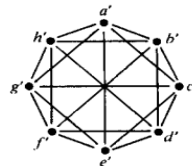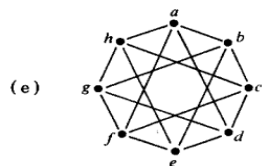(a)   (b)

c)

OR

B   Which of the following pairs of non directed graphs in the following figure are isomorphic? Justify your answer.

(e)

(f)

(g)

★★★★★

FACULTY OF SCIENCE
MSc (FOOD SCI & TECHNOLOGY) I SEMESTER (CBCS) EXAMS, FEB 2025
FOOD CHEMISTRY AND NUTRITION
PAPER - I

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

SECTION-A (4 X 5 =20 Marks)

1   **Answer ALL the questions**

a   Explain types of water in foods.

b   What are protein isolates explain.

c   Explain enzymatic browning

d   Write about food groups.

SECTION-B(4 X 15 =60 Marks)

Answer ALL questions

2   A   Describe the physico chemical and functional properties of polysaccharides.

OR

B   Describe water activity along with its role and importance in foods.

3   A   Describe the functional properties of proteins along with application of protein concentrates.

OR

B   Describe rancidity and its types along with physical and chemical properties of lipids.

4   A   Discuss the flavours found in foods along with changes occurring in minerals during storage and processing.

OR

B   Discuss in detail the browning reactions occurring in foods.

5   A   Discuss the classification of food additives in detail along with their importance.

OR

B   Discuss the sources requirements and RDA of essential nutrients.

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FACULTY OF SCIENCE
M. Sc (FOOD SCIENCE) I SEMESTER (CBCS R-25) EXAMS FEB 2025
FOOD CHEMISTRY
PAPER - I

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

SECTION - A (4 X 5 = 20 Marks)

1   **Answer ALL the questions**

a   Explain the importance and sources of carbohydrates.

b   Write the functions of proteins.

c   List the function of lipids.

d   Explain water activity.

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

2   A   Discuss the classification of carbohydrates with examples.

OR

B   Discuss the food applications of dietary fibre

3   A   Discuss the structure of proteins

OR

B   Describe the reactions of amino acids

4   A   Describe the physical properties of lipids.

OR

B   Discuss the extraction and characterization of lipids from cells and tissues

5   A   Discuss in detail the types of water in foods

OR

B   Describe the methods of estimation of water activity.

★★★★★

FACULTY OF SCIENCE
M. Sc (MICROBIOLOGY) I SEMESTER (CBCS) EXAMINATIONS, FEB 2025
GENERAL MICROBIOLOGY & MICROBIAL PHYSIOLOGY
PAPER - I

TIME: 3 HRS]   [MAX. MARKS: 80

SECTION - A (4 X 5 = 20 Marks)

1   **Answer ALL Questions**
   A   Bacterial endospore structure

   B   Lyophilization

   C   Chemoautotrophy

   D   Building of Macromolecules

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

2   A   Explain the principles, working and applications of Phase Contrast Microscope

                                     OR
     B   Write about the organization and functions of cellular organelles of eukaryotic cells

3   A   Describe the different heterotrophic media used for microbial studies

                                     OR
     B   Explain the cultivation of fungi with suitable diagrams

4   A   Discuss on the microscopic and ecological identification of bacteria

                                     OR
     B   Explain the principles and classification of bacterial taxonomy

5   A   Describe the growth phases in bacteria

                                     OR
     B   Write about continuous culturing of growth method. Add a note on factors effecting growth

                                     ★★★★★

FACULTY OF SCIENCE
M. Sc. (CHEMISTRY) I SEMESTER (CBCS) EXAMINATIONS FEB 2025
INORGANIC CHEMISTRY - I
PAPER - I

Time: 3 Hrs]   [Max. Marks: 80

SECTION - A (4 X 5 = 20 Marks)

1. **Answer ALL Questions**

   a) Describe the rotational axis of symmetry and explain C_2 rotational axis in water molecule?

   b) Explain splitting of d orbitals in trigonal planar complexes.

   c) Derive the relation between stepwise stability constant and overall stability constant.

   d) Draw the molecular orbital energy level diagram of carbon monoxide (CO).

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

2. a) Write the symmetry applications of optical activity and dipole moment in the molecules.

(OR)

b) Explain Dnh, Dnd and Td point groups with examples.

3. a) Describe John-teller distortion in distorted octahedral complexes.

b) Write a note on quenching of orbital angular momentum in metal complexes.

(OR)

c) Explain the weak field and strong field metal complexes.

d) Outline the Gouys method of determining magnetic susceptibility of paramagnetic compounds.

4. a) Describe the Pearson's HSAB (hard-soft acid-base)theory.

b) What are ternary complexes? Explain the formation of ternary complexes with suitable examples.

(OR)

c) Discuss the effect of metal ion on stability of a complex.

d) Explain the principle involved in P^H-metric method of determining stability constants of a metal complex.

5. a) Explain 18 electron rule. Discuss it with respect to metal carbonyls stability.

b) Explain the chemical fixation of dinitrogen.

(OR)

c) Draw the molecular orbital diagram of NO and explain the donor and acceptor molecular orbitals in it.

d) Explain the stereochemical control of valance in $[Co(diars)_2(NO)]^{+2}$ and $[Co(diars)_2(NO)(SCN)]^{+}$.

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FACULTY OF SCIENCE
M. Sc (NUTRITION & DIETETICS) I SEM (CBCS) EXAMINATIONS FEB 2025
HUMAN NUTRITION
PAPER - I

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

SECTION - A (4 X 5 = 20 Marks)

1   **Answer ALL the questions**

    a   Write about derivation of RDA.

    b   Explain immunization schedule.

    c   Write about packed lunch for school going children.

    d   What are the benefits of various types of exercises.

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

2   A   How would you estimate the energy value of foods by bomb calorimeter and benedict's oxy calorimeter.

                                      OR

   B   Describe the principle of meal planning along with steps in meal planning.

3   A   Discuss the maternal weight gain and complications of pregnancy.

                                      OR

   B   Describe the composition of different types of milk along with advantages of breast milk vs bottle milk.

4   A   Discuss the factors to be considered while planning diet for pre school children along with their nutritional requirements.

                                      OR

   B   Describe the sequence of developmental changes occurring in adolescents and role of hormones on growth and development.

5   A   Describe the common diseases and disabilities affecting geriatric groups.

                                      OR

   B   Discuss the nutritional requirements along with water and electrolyte balance athletes.

★★★★★

FACULTY OF SCIENCE
M. Sc. (ENGG.PHYSICS & INSTR. AND PHYSICS) I SEM (CBCS) EXAMS FEB 2025
MATHEMATICAL PHYSICS
PAPER - I

TIME: 3 Hours] [Max. Marks: 80

SECTION – A (4 × 5 = 20 Marks)

1. **Answer ALL the following**

   a. Derive any two recurrence relations of Legendre polynomials.

   b. Write down three alternate definitions of gamma functions.

   c. Evaluate $\int \frac{5z-3}{z(z-2)} dz$ using Cauchy-Residue theorem.

   d. Find the Fourier transform of the function $f(x) = x^2$, $0 < x < 4$

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

2. a) State and prove the orthogonality theorem of Legendre polynomials.

   (OR)

   b) Solve the Hermite differential equation by power series method.

3. a) Write down the four alternate definitions of beta functions.
   b) Evaluate the using gamma functions i) $\int_0^1 \frac{dx}{\sqrt{(1-x^n)}}$ ii) $\int_0^{\pi/2} (tan\theta)^{1/2} d\theta$ iii) $\int_0^\infty \frac{x^3}{(1+x)^5} dx$

   (OR)

   c) Show that array $\begin{bmatrix} -xy & -y^2 \\ x^2 & xy \end{bmatrix}$ is second rank tensor while $\begin{bmatrix} -xy & -y^2 \\ x^2 & xy \end{bmatrix}$ is not a tensor.

4. a) Necessary and sufficient conditions for the function to be analytic.

   (OR)

   b) State and prove Laurent Series.

   c) Using Cauchy integral formula evaluate the integral $\oint \frac{z^2}{z^2-1} dz$ around the unit circle with centre at i) z = 1, ii) z = -1 and iii) z = ½

5. a) Show that Fourier transform of convolution of two functions is 2π times the product of their Fourier transforms
   b) Fourier transform of Step function.

   (OR)

   c) Find the general solution of $y''(t) + k^2 y(t) = 0$ subject to the conditions $y(0) = A$ and $y'(0) = B$.

★★★★★

FACULTY OF SCIENCE
M. Sc. (STATISTICS) I SEMESTER (CBCS) EXAMINATIONS, FEB 2025
MATHEMATICAL ANALYSIS AND LINEAR ALGEBRA
PAPER – I

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

SECTION - A (4 X 5 = 20 Marks)

1   **Answer ALL the questions**

a   If $f(x) = |x|$ then examine the derivability at x =0.

b   State and prove Cauchy's theorem.

c   Write the importance and need of study of generalized inverses.

d   Every quadratic form can always be written such that the matrix of its coefficients is symmetric.

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

2   a   State and Prove first and second mean value theorems.

OR

b   If f and g are two functions of bounded variation on [a, b], show that (f + g) and (f - g) are also functions of bounded variation.

3   a   Define analytic function, Cauchy residue theorem, Taylor's theorem and Laurents theorem

OR

b   State necessary and sufficient conditions for extrema.

4   a   For any matrix A, show that $(A'A^)^+ = (A^+) (A'^)^+$.

OR

b   Define system of homogeneous and non-homogeneous linear equations. Let A be an (m x n) matrix. The linear homogeneous system Ax=0 has a solution other than x=0 iff$\rho(A) < n$.

5   a   Find the rank, index, canonical form of the quadratic form $x^2+2y^2+3z^2+2yz-2xz+2xy$. Also classify it as definite or indefinite quadratic form.

OR

b   Prove that the necessary and sufficient condition that a matrix A is positive definite is that all the leading principal minors of A are consistently positive.

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FACULTY OF SCIENCE
M. Sc (DATA SCIENCE) I SEMESTER (CBCS) EXAMINATIONS, FEB 2025
MATHEMATICAL FOUNDATIONS FOR DATA SCIENCE
PAPER - I

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

SECTION - A (4 X 5 = 20 Marks)

1   **Answer ALL the questions**

   a   Write a short note on Spanning Set.

   b   Explain briefly about Gauss Elimination.

   c   Discuss briefly about Caley-Hamilton Theorem.

   d   Write a brief note on Classification of QFs.

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

2   A   Discuss in detail about Linear transformation and Representation of a linear transformation

                OR

   B   What is rank- nullity theorem? Discuss about Inner-Product Spaces in detail.

3   A   Discuss in detail about orthogonal and idempotent matrices and their properties.

                OR

   B   Distinguish between row canonical form, diagonal form and triangular form.

4   A   Discuss in detail about Diagonalization of a Matrix.

                OR

   B   Write a detailed note on algebraic and geometric multiplicity of a characteristic root and spectral decomposition of a real symmetric matrix.

5   A   Discuss in detail about Simultaneous reduction of two QFs.

                OR

   B   Define index and signature of a QF. Explain in detail about Extreme form of a QF.

★★★★★

FACULTY OF SCIENCE
M. Sc. (MATHEMATICS) I SEM (CBCS R-22NEW) EXAMINATIONS, FEB 2025
ABSTRACT ALGEBRA – I
PAPER - I

TIME: 3 HRS]   [MAX. MARKS: 80

SECTION - A (4 X 5 = 20 Marks)

1   **Answer ALL the questions.**

a   Define group action and discuss three different group actions.

b   Find the non-isomorphic abelian groups of order 360.

c   Let R be a commutative ring with unity. Suppose R has no nontrivial ideals. Prove that R is a field.

d   Prove that an ideal M in the ring of integers Z is a maximal ideal if and only if M = (p), where p is some prime.

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

2   A   (i)State and prove Burnsid theorem.
          (ii) Let G be a group containing an element of finite order n>1 and exactly two conjugacy classes. Provet that |G|=2.

OR

     B   State and prove fundamental theorem of finitely generated abelian groups.

3   A   (i) State and prove first Sylow theorem.
          (ii) Let G be a group of order 108. Show that there exists a normal subgroup of order 27 or 9.

OR

     B   (i) State and prove second and third Sylow theorems.
          (ii) Show that there are at most two groups of order pq.

4   A   (i) Find all ideals in Z and also in Z/(10).
          (ii) State and prove correspondence theorem.

OR

     B   (i) If $A_1, A_2 ..., A_n$ are right ideals in a ring R, then prove that
          $S = \{a_1 + a_2 + \cdots + a_n | a_i \in A_i , i = 1,2, ..., n \}$ is the sum of right ideals $A_1, A_2 ..., A_n$.
          (ii) Let R be a ring with 1 such that R is a finite direct sum of minimal right (left) ideals. Then prove that every right (left) ideal A in R is of the formeR (Re) where e is an idempotent.

5   A   (i) Prove that ifR isa commutative ring, then an ideal P in R is prime if and only
          $ab \in P, a \in R, b \in R$ implies $a \in P$ or $b \in P$.
          (ii) Let R be a commutative ring with unity in which each ideal is prime. Then show that R is a field.

OR

     B   (i) Show that if A and B are nilpotent ideals, their sum A + B is nilpotent.
          (ii) If R is a nonzero ring with unity 1, and I is an ideal in R such that I ≠ R. then there exists a maximal ideal M of R such that $I \subseteq R$.

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FACULTY OF SCIENCE
M. Sc (ZOOLOGY) I SEMESTER (CBCS) EXAMINATIONS FEB 2025
BIOSYSTEMATICS, STRUCTURE & FUNCTION OF INVERTEBRATES
PAPER - I
TIME: 3 HRS]   **[MAX. MARKS: 80**

SECTION - A (4 X 5 = 20 Marks)

1   **Answer ALL the questions**

a   Concept of Speciation

b   Filter feeding

c   Coelomoducts

d   Planula larva

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

2   A   Write the basic principles of classification.

OR

B   Explain key characters of Taxonomy and Apomictic species.

3   A   Describe the patterns of feeding and digestion in Metazoans.

OR

B   Discuss the modifications of digestive systems in Invertebrates.

4   A   Explain the differences of Nervous system in Coelenterates and Echinoderms

OR

B   Write the excretory organs of Arthropods and mechanism of excretion.

5   A   Write general organisation and affinities of Chaetognatha.

OR

B   Illustrate the larval forms of Crustaceans with diagrams.

★★★★★

FACULTY OF SOCIAL SCIENCES
M. A (ECONOMICS) I SEMESTER (CBCS) EXAMINATIONS FEB 2025
MACRO ECONOMIC ANALYSIS – I
PAPER - II

TIME: 3 HRS]   [MAX. MARKS: 80

SECTION - A (5 X 4 = 20 Marks)

1   **Answer ALL the questions**

   a   GNP Deflator

   b   Ratchet effect in consumption behaviour

   c   Marginal efficiency of capital

   d   money multiplier

   e   Derivation of LM curve.

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

2   A   What are the methods of estimating national income in India? Name the sectors which are used in estimating national income in India.

OR

   B   Explain the balance of payments accounting methods

3   A   Describe briefly the absolute income hypothesis.

OR

   B   What is money illusion? How does it affect the consumption of those suffering not suffering from money illusion?

4   A   Describe briefly Growth and Development of Capital Market in India

OR

   B   What is internal rate of return? Suppose an investment projects costs Rs. 5,000 and yields an annual income of Rs. 2,500 for a period of three years. Find the marginal efficiency of capital.

5   A   How is Gurley-Shaw approach to the constituents of money supply different from the conventional approach?

OR

   B   What are the RBI measures of money supply in India?

6   A   Explain the Cambridge quantity theory of money

OR

   B   Explain the Keynesian theory of demand for money

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FACULTY OF SOCIAL SCIENCES
M. A (SOCIOLOGY) I SEMESTER (CBCS) EXAMINATIONS FEB 2025
CLASSICAL SOCIOLOGICAL THOUGHT
PAPER - II

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

SECTION - A (5 X 4 = 20 Marks)

1   **Answer ALL the questions**
  a   Auguste Comte's Positivism

  b   Veblen's theory of leisure class

  c   Historical and Dialectical Materialism

  d   Suicide and it typologies

  e   Weber's Verstehen

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

2   A   Explain the influence of industrial and French revolution on the emergence of sociology.

OR

  B   Analyse Auguste Comte's hierarchy of sciences, law of three stages and social change.

3   A   How did Spencer apply evolutionary principles to the study of society? Explain

OR

  B   Analyze Vilfredo Pareto's theory of residues and derivations

4   A   Explore the concept of alienation in Karl Marx's works and its social implications.

OR

  B   How does Marx view the relationship between economic structure and social change?

5   A   Analyze Emile Durkheim's study of religion in his work "Elementary Forms of Religious Life.

OR

  B   Analyze Durkheim's concepts of social solidarity and division of labour

6   A   Discuss Weber's perspectives on power, authority, and types of authority.

OR

  B   Explain Max Weber's concept of social action and its types with examples.

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FACULTY OF SOCIAL SCIENCES
M.S.W I SEMESTER (CBCS) EXAMINATIONS FEB 2025
SOCIAL CASE WORK
PAPER - II

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

SECTION - A (5 X 4 = 20 Marks)

1   **Answer ALL the questions**

a   Values in case work

b   Transference and counter transference

c   Therapist

d   Recording in case work

e   Social Worker

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

2   A   Write in detail about the different methods of practice of social work in dealing with individuals.

OR

B   What are the objectives of working with individuals?

3   A   Explain in detail about the different theories used in case work?

OR

B   Explain the role of a social worker as a therapist and Social Advocate

4   A   Discuss the process of applying the social case work in Industry and a social welfare agency.

OR

B   What are the ways to improve counsellor and client relations through effective communication

5   A   Give a detailed presentation of case work with any example

OR

B   Explain the detailed review a case work principles with appropriate examples.

6   A   Elaborate the types involved in recording Social Case work.

OR

B   Write about the case work method in understanding Welfare agency.

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FACULTY OF ARTS
M. A (TELUGU) I SEMESTER (CBCS) EXAMINATIONS FEB 2025
సంప్రదాయ కవిత్వం -1
పేపర్ - II

సమయం: 3 గంటలు]   [గరిష్ట మార్కులు : 80

సెక్షన్ - ఎ (5 X 4 = 20 మార్కులు)

1   ఈ క్రింది వానిపై లఘు వ్యాఖ్య వ్రాయండి

ఎ   రాజరాజనరేంద్రుడు

బి   తిక్కన తెలుగుదనం

సి   ఎర్రన

డి   దేశికవిత

ఇ   పోతన భక్తి కవిత

సెక్షన్ – బి (5 X 12 = 60 మార్కులు)
అన్ని ప్రశ్నలకు సమాధానాలు వ్రాయండి

2   ఎ   అవతారిక రచనారీతిని నన్నయ ఆంధ్రమహాభారత అవతారికద్వారా చర్చించండి

లేదా

బి   అవతారికలో నన్నయ చెప్పుకున్న తన కవితా రీతులను వివరించండి

3   ఎ   మీపాఠ్యం ఆధారంగా తిక్కన సంభాషణా శైలిని వివరించండి

లేదా

బి   పాండవుల అజ్ఞాతవాస రీతి పరమార్థాన్ని సోదాహరణంగా చర్చించండి

4   ఎ   సావిత్రి కథ ఇచ్చే సందేశాన్ని వివరించండి

లేదా

బి   సావిత్రి కథ ఆధారంగా ఎర్రన సూక్తి వైచిత్రిని విశదీకరించండి

5   ఎ   ముగ్ధ భక్తులలో బెజ్జమహాదేవి ప్రత్యేకతను వివరించండి

లేదా

బి   బెజ్జమహాదేవి కథ ఆధారంగా సోమన కవితారచన శైలిని వివరించండి

6   ఎ   పోతన కవితా దృక్పథాన్ని మీ పాఠ్యాంశం ఆధారంగా వివరించండి

లేదా

బి   పోతన భాగవత రచనలోని ఆత్మీయతను మీపాఠ్యం ఆధారంగా చర్చించండి

★★★★★

FACULTY OF ARTS
M. A. (ENGLISH) I SEMESTER (CBCS-NEW) EXAMINATIONS, FEB 2025
ENGLISH LITERATURE FROM CHAUCER TO BACON
PAPER - II

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

SECTION - A (5 X 4 = 20 Marks)

1   **Answer ALL the following questions**

A   Write a short note on Elizabethan Age?

B   How is Satan characterized in *Paradise Lost?*

C   Write a short note on Ben Johnson's language and style in his essays?

D   What is the significance of comet in *Julius Caesar?*

E   How does John Donne distinguish between physical love and spiritual love?

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

2   A   Write an essay on the Age of Reformation?

OR

    B   Write in detail on Puritanism?

3   A   How does Chaucer's *The Prologue to Canterbury Tales* reflect fourteenth – century English society? Discuss.

OR

    B   How Satan does brings courage to the hearts of the fallen angels in the Book-I of *Paradise Lost?* Explain.

4   A   Discuss Ben Johnson's *Volpone* as a Comedy of Humours?

OR

    B   *Dr Faustus* has elements of Christian morality and classical tragedy? Explain.

5   A   Write an essay on the central theme of *Hamlet?*

OR

    B   Julius Caesar says, "For let the gods so speed, as I love the name of honour more than I fear death." Elucidate?

6   A   Bacon writes, "For a young man a wife serves the purpose of a mistress, in the middle age she is a companion and to the old man she is a nurse." Explain?

OR

    B   Write an essay on the central idea of George Herbert's *The Collar*?

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FACULTY OF ARTS
M.A. (ENGLISH) I SEMESTER (CBCS-OLD) EXAMINATIONS FEB 2025
ENGLISH POETRY
PAPER - II

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

SECTION-A (5 X 4 = 20 Marks)

1   **Answer ALL the following questions**

   A   War Poetry

   B   How does John Donne describe separation in *A Valediction: Forbidding Mourning?*

   C   What does the wind symbolize in *Ode to West Wind?*

   D   Write a short note on use of symbols in Philip Larkin's *Chruch Going?*

   E   What is the importance of Tiresias in *The Waste Land?*

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

2   A   Write an essay on Neo-Classicism?
                                OR
    B   What are the main features of Postmodernism? Explain.

3   A   Discuss Milton's grand style in Paradise Lost?
                                OR
    B   Discuss the mock-heroic elements in Alexander Pope's *The Rape of the Lock?*

4   A   How does Blake deal with the problem of conflict in the world of children in *The Chimney Sweeper?*
                                OR
    B   What is the central idea of John Keat's *Ode to Nightingale ?* Explain

5   A   Attempt critical analyses of Alfred Lord Tennyson's *Ulysses?*
                                OR
    B   Discuss Robert Browning's poems as dramatic monologue prescribed for your study?

6   A   Write an essay on the use of myth by Eliot in *The Waste Land?*
                                OR
    B   Discuss the religious elements in Philip Larkin's *Chruch Going?*

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FACULTY OF ARTS

M.A. (Urdu) I - Semester Examination (CBCS)

Paper - II   دوسرا پرچہ

Masnavi   (مثنوی)

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

Answer All the questions.

(حصہ الف)

نوٹ :   تمام سوالات حل کیے جائیں۔ ہر سوال کے چار (4) نشانات ہیں۔ ہر جواب پندرہ (15) سطروں میں تحریر کیا جائے۔   (5 x 4 = 20)

1۔   پنڈت دیا شنکر نسیم پر مختصر نوٹ تحریر کیجیے۔

2۔   مثنوی کی تعریف کیجیے اور اس کے موضوعات کی وضاحت کیجیے۔

3۔   اُردو کی اولین مثنوی ''کدم راؤ پدم راؤ'' کی اہمیت پر روشنی ڈالیے۔

4۔   نواب مرزا شوق کے ادبی کارناموں کا تعارف کرائیے۔

5۔   میر حسن کی مثنوی ''سحر البیان'' میں منظر نگاری کی خوبیوں پر تبصرہ کیجیے۔

(حصہ ب)

نوٹ :   تمام سوالات حل کیے جائیں۔ ہر سوال کے بارہ (12) نشانات مختص ہیں۔ ہر سوال کا جواب چار (4) صفحات سے زیادہ نہ ہو۔

(5 x 12 = 60)

6۔   (A)   صنف مثنوی کے فنی اور تکنیکی پہلوؤں کی وضاحت کیجیے۔   (یا)

      (B)   مثنوی کے بارے میں حالی کے خیالات کا جائزہ لیجیے۔

7۔   (A)   عادل شاہی دور میں دکنی مثنوی کے ارتقا پر روشنی ڈالیے۔   (یا)

      (B)   شمالی ہند کی اولین مثنویوں کے بارے میں اپنی معلومات قلم بند کیجیے۔

8۔   (A)   ''گلزار نسیم'' کے پلاٹ کا خلاصہ تحریر کیجیے۔   (یا)

      (B)   پنڈت دیا شنکر نسیم کی کردار نگاری کا فنی محاسبہ کیجیے۔

9۔   (A)   میر حسن کی مثنوی نگاری کا تنقیدی جائزہ لیجیے۔   (یا)

      (B)   مثنوی ''سحر البیان'' کے محاسن و معائب کی نشان دہی کیجیے۔

10۔ (A)   بہ حیثیت مثنوی نگار نواب مرزا خاں شوق کے مقام کا تعین کیجیے۔   (یا)

      (B)   مثنوی ''زہر عشق'' کا تنقیدی محاکمہ کیجیے۔

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FACULTY OF COMMERCE
M.Com. (ALL STREAMS) I SEMESTER (CBCS) EXAMINATIONS FEB 2025
MANAGERIAL ECONOMICS
PAPER - II

Time: 3 Hours]   [Max. Marks: 80

SECTION - A (5 X 4 = 20 Marks)

1.   **Answer ALL the questions**

a) Define Managerial Economics.

b) What is Demand Forecasting?

c) What is ISO Quant?

d) Kinked Demand Curve

e) What is Profit policy?

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

2.   a) Explain the Nature and Scope of Managerial Economics.

(OR)

b) What are the business objectives and alternative objectives of Organisation?

3.   a) What is elasticity of demand ? Explain the types of Price elasticity of Demand.

(OR)

b) Define Law of Demand and explain its assumptions and exemptions.

4.   a) What is Production function? Explain it with one variable.

(OR)

b) What is the behaviour of costs in short run? Explain in detail.

5.   a) What is Market? Explain the characteristics of perfect competition market.

(OR)

b) What is monopoly? Explain the Price and Output determination under monopoly

6.   a) What is plant, firm and industry ? Explain various types of industries.

(OR)

b) Critically examine the controlling and forecasting methods of Profit policy.

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FACULTY OF SCIENCE
M. Sc (BOTANY) I SEMESTER (CBCS) EXAMINATIONS FEB 2025
MYCOLOGY AND MICROBIOLOGY
PAPER - II

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

SECTION - A (4 X 5 = 20 Marks)

1   **Answer ALL Questions**

   A   Heterokaryosis

   B   Development of ascocarp

   C   Whittaker classification

   D   Diseases caused by spiroplasma

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

2   A   Explain the different forms of asexual reproduction in different groups of fungi.

OR

   B   Explain the outlines of nomenclature and recent taxonomic criteria for fungi systematics.

3   A   Give a detailed account on deuteromycotina as fungi imperfecti.

OR

   B   Explain the thallus organization, reproduction and ecology of lichens.

4   A   Describe the general characteristics of plant pathogenic bacteria.

OR

   B   Explain the molecular events in different gene transfer mechanisms in bacteria.

5   A   Explain the characteristics and ultrastructure of virions.

OR

   B   Describe the symptoms and transmission of plant viruses.

★★★★★

FACULTY OF SCIENCE
M. Sc (COMP SCI) I SEMESTER (CBCS) EXAMINATIONS FEB 2025
OPERATING SYSTEMS
PAPER - II

TIME: 3 HRS]   [MAX. MARKS: 80

SECTION - A (4 X 5 = 20 Marks)

1   **Answer ALL the questions**

a   Write a short note on Threads.

b   Explain briefly about Deadlocks.

c   Explain briefly the Disk Structure.

d   List out Goals of Protection.

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

2   A   What is Process Synchronization? Explain about Critical-Section Problem and Peterson's Solution.

OR

B   What are System Calls? Write a detailed note on Types of System Calls.

3   A   What is Thread-Scheduling? Explain in detail about Algorithm Evaluation.

OR

B   Discuss in detail about Deadlock Detection and Recovery from Deadlocks.

4   A   What is Main Memory? Explain in detail about Contiguous Memory Allocation and Segmentation.

OR

B   What is Virtual Memory? Explain in detail about Demand Paging and Page Replacement.

5   A   i) Explain in detail about Network File System.
         ii) Discuss about Computer-Security Classifications.

OR

B   Discuss in detail the following:

a) Directory Implementation.   b) User Authentication   c) Allocation Methods.

★★★★★

FACULTY OF SCIENCE
M. Sc (FOOD SCIENCE &TECHNOLOGY) I SEM (CBCS) EXAMS FEB 2025
FOOD MICROBIOLOGY
PAPER - II

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

SECTION - A (4 X 5 = 20 Marks)

1   **Answer ALL the questions**

a   Explain the microbial growth pattern.

b   Explain the causes of spoilage.

c   What are microbial toxins explain with help of examples.

d   Explain the term cell immobilization and what its benefits are.

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

2   A   Discuss antagonism and synergism in microorganisms.

OR

   B   Give a brief account on

       (i) effect of injury on growth of microorganisms.

       (ii) biochemical changes occurring during putrefaction.

3   A   Briefly explain contamination and spoilage caused by microorganisms in grains and oilseeds.

OR

   B   Briefly explain contamination and spoilage caused by microorganisms in meat and poultry.

4   A   Discuss in detail food borne infections

OR

   B   Describe the chemical and non- thermal methods used to control microorganisms.

5   A   Discuss the utilization and disposal of industrial waste through microorganisms.

OR

   B   Discuss the production of microbial lipids and microbial polysaccharide with examples.

★★★★★

FACULTY OF SCIENCE
M. Sc (FOOD SCIENCE) I SEMESTER (CBCS R-24) EXAMINATIONS FEB 2025
PROCESSING TECHNOLOGYOF CEREALS LEGUMES AND OILSEEDS
PAPER – II

TIME: 3 HRS]   [MAX. MARKS: 80

SECTION - A (4 X 5 = 20 Marks)

1   **Answer ALL the questions**

   a   Explain the changes occurring during aging of rice.

   b   Write about antinutritional factors in legumes.

   c   Explain the vegetable protein isolates and their uses.

   d   Give a brief account on ethical foods.

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

2   A   Discuss the process and methods of parboiling of rice.

OR

     B   Give a brief accounting on losses of food grains.

3   A   Briefly discuss the applications of corn products

OR

     B   Discuss the importance of millets in treatment of lifestyle diseases.

4   A   Discuss the methods of processing of oil seeds

OR

     B   Describe the processing of milk beverage from oil seeds

5   A   Give a brief account on processed foods.

OR

     B   Discuss in brief about high protein food technologies

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FACULTY OF SCIENCE
M. Sc (MICROBIOLOGY) I SEMESTER (CBCS) EXAMINATIONS FEB 2025
VIROLOGY
PAPER – II

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

SECTION - A (4 X 5 = 20 Marks)

1   **Answer ALL Questions**

A   Prions

B   Banana buncy top virus

C   Tumor virus

D   Baculovirus system

SECTION – B (4 X 15 = 60 Marks)

Answer ALL Questions

2   A   Explain Virus structure and Morphology.

OR

B   Write about (i) Animal viruses, (ii) Evolutinary importance of virus.

3   A   Explain (i) Endocytosis , (ii) Influenza virus

OR

B   Compare Lytic and Lysogenic cycle.

4   A   Explain about interferons and their classification.

OR

B   Describe antiviral agents (Chemical & Biological) and explain these mode of action.

5   A   What are viral vaccines? Write its preparation process in detail.

OR

B   Write down critical notes on (i) Insect cell lines (ii) Silver lining.

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FACULTY OF SCIENCE
M. Sc. (CHEMISTRY) I SEMESTER (CBCS) EXAMINATIONS FEB 2025
ORGANIC CHEMISTRY - I
PAPER - II

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

SECTION - A (4 X 5 = 20 Marks)

1. **Answer ALL Questions**

   a) What is prochirality? Explain with an example.

   b) Write a note on non-classical carbocations.

   c) Write a note on the generation and stability of free radicals.

   d) What is the isoprene rule? Explain

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

2. (a) Assign R/S-configuration for the following molecules.

   (b) Write a note on symmetry operations.

   OR

   (c) What is Atrop isomerism? Explain with examples.

   (d) Explain Re and Si faces with examples.

3. (a) Write a note on factors governing elimination Vs substitution in a given reaction.

   (b) Discuss the role of NGP in enhanced reaction rates with examples.

   OR

   (c) Write a note on cross-over experiments and their usefulness.

   (d) Classify and explain various types of elimination reactions.

4. (a) Write the Beckmann Rearrangement and its applications.

   (b) Explain Pinacol- Pinacolone rearrangement

   OR

   (c) Describe Baeyer-Villiger Oxidation and its applications.

   (d) Discuss Favorskii Rearrangement.

5. (a) Explain the general methods used in structure determination of terpenes.

   (b) Write the synthesis and reactivity of acridine.

   OR

   (c) Write the synthesis and reactivity of Indole.

   (d) Write the synthesis and structure determination of α-terpineol.

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FACULTY OF SCIENCE
M. Sc (NUTRITION & DIETETICS) I SEMESTER (CBCS) EXAMINATIONS, FEB 2025
NUTRITIONAL BIOCHEMISTRY - I
PAPER - II

TIME: 3 HRS]   [MAX. MARKS: 80

SECTION - A (4 X 5 = 20 Marks)

1   **Answer ALL the questions**

a   Write about lactose intolerance and fructose intolerance.

b   Explain RNA and its types.

c   Explain about Alkaptonuria.

d   Write about hypoalbuminemia.

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

2   A   Give a brief account on (i) glycogenolysis (ii)functions of carbohydrates.

OR

B   Discuss the TCA cycle along with energetics.

3   A   Describe the classification of proteins with examples along with functions.

OR

B   Discuss the components of nucleic acids, along with thestructure functionsof DNA.

4   A   Discuss deamination, transamination, deamidation and decarboxylation.

OR

B   Discuss the metabolism of arginine.

5   A   Describe the synthesis of purines.

OR

B   Give a brief account on chaperones and protein folding.

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FACULTY OF SCIENCE
M.SC. (ENGG. PHYSICS AND INSTR. & PHYSICS) I SEM (CBCS) EXAMINATIONS FEB 2025
CLASSICAL MECHANICS
PAPER – II

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

SECTION – A (4 X 5 = 20 Marks)

1) **Answer ALL the following**

   (a) What is principle of virtual work? State D'Alembert's principle from it.

   (b) State the condition for a transformation to be canonical and show that the transformation
$q = \sqrt{2P} \sin Q$, $p = \sqrt{2P} \cos Q$

   (c) Derive the expression for angular momentum of a rigid rotating body .

   (d) What is the physical significance of Hamilton's characteristic function and establish a relation between Hamilton's principle function and Hamilton's characteristic function.

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

2) (a) Deduce Lagrange's equation of motion for
      i) Compound pendulum and find time period for small amplitude oscillations
      ii) A particle moving under central force field
(OR)
  (b) State and prove Hamilton variational principle and derive Lagrange's equation from it.

3) (a) Obtain Hmiltonian function and write its physical significance
   (b) Derive Hamilton's equations of motion.
(OR)
  (c) Derive Lagrangian for a charged particle in an electromagnetic field. Obtain Hamiltonian and Hamilton's equations of motion for the same particle

4) (a) What are Euler's angles and obtain expression for complete transformation matrix from space set of axis to body set of axis for a rigid body.
(OR)
  (b) Discuss the different modes of vibrations of a linear triatomic molecule and obtain eigen vector for each mode of vibration.

5. (a) Obtain Hamilton-Jacobi equation for Hamilton's principle function and find the solution for Harmonic Oscillator problem by Hamilton-Jacobi method
(OR)
  (b) Solve the Kepler's problem by using Action-Angle variables

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FACULTY OF SCIENCE
M. Sc. (STATISTICS) I SEMESTER (CBCS) EXAMINATIONS, FEB 2025
PROBABILITY THEORY
PAPER - II

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

SECTION - A (4 X 5 = 20 Marks)

1   **Answer ALL the questions**

    a   State Caratheodery extension theorem and write its importance?

    b   State Jensen's inequality and write any four of its applications?

    c   Show that almost sure convergence implies convergence in probability?

    d   State Lindberg Feller Central Limit Theorem?

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

2   a   State the properties of Measurable sets and Measurable functions.
        State Monotone convergence theorem and write any four of its applications

                          OR

    b   If X is a random variable, examine whether the following are random variables?
        (i) $g(X) = 1/X$. (ii) $g(X) = \log X$ (iii) $g(X) = X^2$

3   a   State and prove Holder's and Liapunov's inequalities. Also write their applications?

                          OR

    b   Find the density function f(x) corresponding to the characteristic function defined as
        follows: (i) $\phi(t) = 1- |t|$, $|t| \leq 1$ and $= 0$ $|t| > 1$ (ii) $\phi(t) = (q + pe^{it})^n$.

4   a   Show that the convergence in probability is closed under arithmetic operations

                          OR

    b   State and prove the Slutskey's theorem.

5   a   State and Prove Lindberg-Levy Central Limit Theorem. Illustrate it with an example.

                          OR

    b   Let $\{X_n, n \geq 1\}$ be a sequence of Bernoulli random variables. The distribution of the sum of the sequence follows asymptotically Normal.

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FACULTY OF SCIENCE
M. Sc (DATA SCIENCE) I SEMESTER (CBCS R-23) EXAMINATIONS, FEB 2025
DESIGN AND ANALYSIS OF ALGORITHMS
PAPER - II

TIME: 3 HRS]   [MAX. MARKS: 80

SECTION - A (4 X 5 = 20 Marks)

1   **Answer ALL the questions**

   a   Write a short note on Divide and Conquer Technique.

   b   Explain the concept of Dynamic Programming technique.

   c   Write a short note on Binary Tree.

   d   Explain briefly about NP-Complete Problem.

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

2   A   Discuss the implementation of Strassen's Matrix Multiplication.

OR

    B   Explain the implementation of merge Sort with an example.

3   A   Explain the implementation of Knapsack Problem using Greedy Technique.

OR

    B   Define Spanning Tree. Explain the implementation of Prim's Algorithm with an example.

4   A   Write a detailed note on Biconnected Components and DFS.

OR

    B   Discuss about solving Traveling Sales Person problem in Branch and Bound technique.

5   A   Define Cook's Theorem. Explain in detail about NP-Hard Problems.

OR

    B   Discuss in detail about NP-Hard Code Generation and Some Simplified NP- Hard Problems.

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FACULTY OF SCIENCE
M. Sc. (MATHEMATICS) I SEM (CBCS) EXAMINATIONS, FEB 2025
MATHEMATICAL ANALYSIS - I
PAPER – II

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

SECTION - A (4 X 5 = 20 Marks)

1   **Answer ALL the questions.**

a   Prove that every neighbourhood is an open set.

b   Define f(x) = 1 if x rational, and f(x)=0 if x irrational. Then show that f has a discontinuity of the second kind at every point x.

c   Define Riemann-Stieltjes integral.

d   Prove that the series $\sum_{n=1}^{\infty}(-1)^n \frac{x^2+n}{n^2}$ converges uniformly in every bounded interval, but does not converge absolutely for any value of x.

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

2   A   (i) Prove that compact subsets of metric spaces are closed.
         (ii) Prove that every k-cell is compact.

OR

   B   (i) Prove that closed subsets of compact sets are compact.
         (ii) Prove that a subset E of the real line R^1 is connected if and only if it has the following property: If x ∈E, y∈E, and x < z < y, then z ∈E.

3   A   (i) Prove that a mapping f of a metric space X into a metric space Y is continuous on X if and only if f^{-1}(V) is open in X for every open set V in Y.
         (ii) If f is a continuous mapping of a metric space X into a metric space Y, and if E is a connected subset of X, then prove that f(E) is connected

OR

   B   (i) Suppose f is a continuous mapping of a compact metric space X into a metric space Y. Then prove that f(X) is compact.
         (ii) Let f be monotonic on (a, b). Then prove that the set of points of (a, b) at which f is discontinuous is at most countable.

4   A   (i) Suppose f is bounded on [a, b], f has only finitely many points of discontinuity on [a, b], and α is continuous at every point at which f is discontinuous. Then prove that f∈ $\mathcal{R}(\alpha)$.
         (ii) If f∈ $\mathcal{R}(\alpha)$ on [a,b] and if |f(x)|≤ M on [a,b], then show that $|\int_a^b f \, d\alpha| \le M(\alpha(b) - \alpha(a))$

OR

   B   (i) Let f∈ $\mathcal{R}(\alpha)$ on $[a, b]$. For $a \le x \le b$, put $F(x) = \int_a^x f(t)dt$. Then prove that F is continuous on $[a, b]$; furthermore, if f is continuous at a point x_0 of $[a, b]$, then F is differentiable at x_0, and $F'(x_0) = f(x_0)$.
         (ii) State and prove the fundamental theorem of calculus.

5   A   (i) Suppose $\{f_n\}$ is a sequence of functions defined on E, and suppose $|f_n(x)| \le M_n$, $(x \in$ E, n = 1, 2, 3, ...). Then prove that $\sum f_n$ converges uniformly on E if $\sum M_n$ converges.
         (ii) Let α be monotonically increasing on $[a, b]$. Suppose $f_n \in \mathcal{R}(\alpha)$ on $[a, b]$, for n = 1, 2, 3, ... , and suppose $f_n \to f$ uniformly on $[a, b]$. Then prove that f∈ $\mathcal{R}(\alpha)$ on $[a, b]$, and $\int_a^b f d\alpha = \lim_{n\to\infty} \int_a^b f_n d\alpha$.

OR

   B   Prove that if f is a continuous complex function on $[a, b]$, there exists a sequence of polynomials P_n such that $\lim_{n\to\infty} P_n(x) = f(x)$ uniformly on $[a, b]$. If f is real, the P_n may be taken real.

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FACULTY OF SCIENCE
M. Sc (ZOOLOGY) I SEMESTER (CBCS) EXAMINATIONS, FEB 2025
TOOLS AND TECHNIQUES IN BIOLOGY
PAPER - II

TIME: 3 HRS]   [MAX. MARKS: 80

SECTION - A (4 X 5 = 20 Marks)

1   **Answer ALL the questions**

a   Centrifugation

b   Types of Microtomes

c   Transplantation

d   Biosensors uses

SECTION - B (4 X 15 = 60 Marks)

Answer ALL questions

2   A   Write the Principle, structural components and application of Electrophoresis.

OR

B   Explain the working protocols and applications of Spectrophotometer.

3   A   Give an account on the types of Microscopes and their uses in Biology.

OR

B   Describe the procedure of tissue preparation for Light microscope studies.

4   A   Write the surroundings and metabolic capabilities of animal cell.

OR

B   What are Cell lines? Write about the development of Culture systems.

5   A   Explain the description and applications of Scintillation counter.

OR

B   Discuss about Autoradiography method and its applications in detail.

★★★★★

FACULTY OF SOCIAL SCIENCES
M. A (ECONOMICS) I SEMESTER (CBCS) EXAMINATIONS, FEB 2025
QUANTITATIVE METHODS – I
PAPER - III

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

SECTION - A (5 X 4 = 20 Marks)

1   **Answer ALL the questions**
- a   Concepts of derivative
- b   Multivariable functions
- c   Gini coefficient
- d   standard error
- e   Cost of living index numbers.

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

2   A   Explain the Rules of differentiation

OR

    B   Describe briefly Elasticities and their types

3   A   State the rules of partial differentiation

OR

    B   Explain the Concept and types of production functions,

4   A   Describe the Methods of collecting data

OR

    B   From the following frequency distribution calculate the mean weight of the students

Weight (in *kgs.*)	64	65	66	67	68	69	70	71	72	73
No. of Students	1	6	10	22	21	17	14	5	3	1

5   A   Define the correlation and State the assumptions of Karl Pearson's Correlation.

OR

    B   From the following data obtain the regression equation of X on Y, and also that of Y on X:

X	6	2	10	4	8
Y	9	11	5	8	7

6   A   Discuss the Simple aggregative method of constructing Price index number.

OR

    B   From the following data, calculate price index numbers for the current year by using
       a) Paasche's method
       b) Laspeyre's method

Commodity	Base year		Current year	
	Price	Quantity	Price	Quantity
A	8	50	20	60
B	2	15	6	10
C	1	20	2	8
D	2	10	5	8
E	1	40	3	30

★★★★★

FACULTY OF SOCIAL SCIENCES
M. A (SOCIOLOGY) I SEMESTER (CBCS) EXAMINATIONS FEB 2025
RESEARCH METHODOLOGY, SOCIAL STATISTICS & COMPUTER APPLICATIONS
PAPER - III

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

SECTION-A (5 X 4 = 20 Marks)

1.   **Answer ALL the questions**
   - a   Applied Sociology
   - b   Quantitative Research
   - c   Observation
   - d   Measures of Central Tendency
   - e   Coding and Recording

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

2 A   Explain the characteristics of scientific inquiry in Sociology and how they contribute to the advancement of knowledge in the field.

OR

  B   Narrate the significance of research design in social research. Define exploratory, descriptive, and experimental research designs

OR

  B   Explain the purpose of descriptive research in social sciences. Give an example of a study that employs a descriptive research design.

4 A   Define the interview method of data collection. Discuss the different types of interviews used in social research.

OR

  B   Discuss the significance of interviews in social research. Explain the different types of interviews and their respective advantages and disadvantages.

5 A   Explain the concepts of Participatory Rural Appraisal (PRA) and Participatory Learning and Action (PLA) in social research. Discuss their significance in studying rural communities.

OR

  B   Describe the components of an interview schedule and discuss its importance in structured interviews.

6 A   Explain the purpose of spreadsheet packages such as MS-Excel and SPSS in data analysis. Discuss their key features and advantages.

OR

  B   Describe the chi-square test and its significance in social research. Provide examples of variables that can be analyzed using the chi-square test.

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FACULTY OF SOCIAL SCIENCES
M.S.W I SEMESTER (CBCS) EXAMINATIONS, FEB 2025
SOCIAL POLICY AND PLANNING
PAPER - III

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

SECTION - A (5 X 4 = 20 Marks)

1   **Answer ALL the questions**

   a   Social welfare policy

   b   Contribution of research in policy formulation

   c   Population policy

   d   Functions of planning commission

   e   Weaker Sections

SECTION – B (5 X 12 = 60 Marks)

Answer ALL questions

2   A   Explain the concept of social policy and its importance in development

OR

   B   Describe sources of social policy

3   A   Explain the various approaches of social policy

OR

   B   What is role of professional social worker in policy formulation, planning and implementation

4   A   Discuss the evaluation of social policy in India

OR

   B   Briefly discuss the policies related to environment and ecology

5   A   What is social planning? Discuss it.

OR

   B   Describe the implementation of social planning at various levels

6   A   Write a broad overview on five years plan in India

OR

   B   Describe the development measures taken by government for the Weaker section

★★★★★

FACULTY OF ARTS
M. A (TELUGU) I SEMESTER (CBCS) EXAMINATIONS, FEB 2025
వ్యాకరణం - భాషాచరిత్ర - 1
పేపర్ - III

సమయం: 3 గంటలు]   [గరిష్ట మార్కులు : 80

సెక్షన్ - ఎ (5 X 4 = 20 మార్కులు)

1 ఈ క్రింది వానిపై లఘు వ్యాఖ్య వ్రాయండి

   ఎ   ప్రయోగ శరణం వ్యాకరణం

   బి   ద్రుతము, ద్రుత ప్రకృతికములు సంజ్ఞల వివరణ

   సి   విభక్తులు

   డి   తెనుగు

   ఇ   మగడు రూపసాధన

సెక్షన్ – బి (5 X 12 = 60 మార్కులు)

అన్ని ప్రశ్నలకు సమాధానాలు వ్రాయండి

2 ఎ   వ్యాకరణాన్ని నిర్వచించి తెలుగు వ్యాకరణాలు వికసించిన రీతిని చర్చించండి

లేదా

   బి   తెలుగు వ్యాకరణ వ్యాఖ్యానాలలో రమణీయం ప్రత్యేకతను వివరించండి

3 ఎ   సంజ్ఞ పరిచ్ఛేదం లోని పారిభాషిక పదాలను ససూత్రంగా వివరించండి

లేదా

   బి   ఉత్తునకు అచ్చు పరంబగునపుడు సంధియగు,
        అత్తునకు సంధి బహుళము సూత్రాలను సోదాహరణంగా వ్యాఖ్యానించండి

4 ఎ   కద్రువ నాగమాత, పృథ్వీవాచి భూశబ్దంబునకు భువియగు
        సూత్రాలను సోదాహరణంగా వ్యాఖ్యానించండి

లేదా

   బి   ఆచ్చిక పరిచ్ఛేదం లోని ఔపవిభక్తిక కార్యాలను విశదీకరించండి

5 ఎ   ఆంధ్రము, తెనుగు , తెలుగు పదాల చరిత్రను వివరించండి

లేదా

   బి   ద్రావిడ భాషలలో తెలుగు స్థానాన్ని వివరించండి

6 ఎ   తెలుగులో అర్థ విపరిణామ కారణాలను, రీతులను వివరించండి

లేదా

   బి   తెలుగులో ధ్వనివిపరిణామ కారణాలను   చర్చించండి

★★★★★

FACULTY OF ARTS
M. A. (ENGLISH) I SEMESTER (CBCS-NEW) EXAMINATIONS FEB 2025
NEO-CLASSICAL AGE
PAPER - III

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

SECTION-A (5 X 4 = 20 Marks)

1   **Answer ALL the following questions**

A   Reason and Order

B   Role of Achitophel

C   Give a description of Brobdingnag?

D   What is the significance of the title *The Rivals?*

E   Why She Stoops to Conquer is called the 'Mistakes of the Night'?

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

2   A   Write an essay on the Augustan Age?

OR

   B   Why is Restoration period called as the Age of Reason? Explain.

3   A   Pope writes, "But Since, alas! frail beauty must decay, curled or uncurled, since locks will turn to grey." Elucidate?

OR

   B   Discuss *Absalom and Achitophel* as a political allegory?

4   A   How does Daniel Defoe achieve verisimilitude in *Robinson Crusoe?*

OR

   B   Discuss Swift's use of Houyhnhnms land to portray his vision of Utopia in *Gulliver's Travels?*

5   A   Write a critical analysis of Addison's essays prescribed for your study?

OR

   B   Sketch the character of Mrs Malaprop in *The Rivals?*

6   A   What techniques does William Wycherley use in *The Country Wife?*

OR

   B   Justify the title *She Stoops to Conquer?*

★★★★★

FACULTY OF ARTS
M. A. (ENGLISH) I SEMESTER (CBCS OLD) EXAMINATIONS, FEB 2025
ENGLISH DRAMA
PAPER - III

TIME: 3 HRS]   [MAX. MARKS: 80

SECTION-A (5 X 4 = 20 Marks)

1   **Answer ALL the following questions**

A   Tragedy

B   What function does magic do in the *Tempest?*

C   Discuss the character of Cecily Cardew in *The Importance of Being Earnest?*

D   What are the similarities and differences between Marlene and Joyce in *Top Girls?*

E   Who are the riders in the *Riders to the Sea?*

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

2   A   Write in detail on Restoration Drama?

OR

B   Write an essay on the theatre of Absurd?

3   A   Comment on Lear's madness as a symbol in the play *King Lear?*

OR

B   Compare and Contrast Caliban and Ariel in *Tempest?*

4   A   Write an essay on the theme of love and passion in Oscar Wilde's *The Importance of Being Earnest?*

OR

B   Write a critical analysis of Joan of Arc's character in *Saint Joan?*

5   A   Write an essay on the theme of Cultural Imperialism in *Look Back in Anger?*

OR

B   How does Stoppard use the structure of *Indian Ink* to present his concern? Explain.

6   A   Discuss the use of symbolism in Riders to the Sea?

OR

B   Write an essay on the main theme of Alan Ayckbourn's *Mother Figure?*

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FACULTY OF ARTS

M.A. (Urdu) I - Semester Examination (CBCS)

Paper - III   تیسراپرچہ

(داستان) Dastaan

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

Answer All the questions.

(حصہ الف)

نوٹ : تمام سوالات حل کیے جائیں۔ ہر سوال کے چار(4)نشانات ہیں۔ ہر جواب پندرہ(15)سطروں میں تحریر کیا جائے۔   (5 x 4 = 20)

1۔ داستان کے زوال کے اسباب بیان کیجیے۔

2۔ انسانی سماج میں کہانی کہنے اور سننے کی روایت پر مختصر نوٹ لکھیے۔

3۔ ملّا وجہی کی ادبی خدمات پر روشنی ڈالیے۔

4۔ رجب علی بیگ سرورؔ کے سوانحی حالات مختصراً قلم بند کیجیے۔

5۔ میر اممّن کے حالات زندگی پر روشنی ڈالیے۔

(حصہ ب)

نوٹ : تمام سوالات حل کیے جائیں۔ ہر سوال کے بارہ(12)نشانات مختص ہیں۔ ہر سوال کا جواب چار(4)صفحات سے زیادہ نہ ہو۔   (5 x 12 = 60)

6۔ (A) داستان کے فن اور تکنیک کی تفصیلی وضاحت کیجیے۔   (یا)

    (B) داستان کی ادبی اور تہذیبی اہمیت کے بارے میں اپنے خیالات کا اظہار کیجیے۔

7۔ (A) داستان کے فروغ میں فورٹ ولیم کالج کی خدمات پر تبصرہ کیجیے۔   (یا)

    (B) دکنی داستانوں کا مفصل تعارف کرائیے۔

8۔ (A) خواجہ سگ پرست کے کردار کی خوبیوں اور خامیوں پر روشنی ڈالیے۔ (یا)

    (B) باغ و بہار میں مذکور بصرے کی شہزادی کی روداد تحریر کیجیے۔

9۔ (A) ''سب رس'' کے اہم کرداروں پر جامع نوٹ تحریر کیجیے۔   (یا)

    (B) ''سب رس'' کی ادبی اور فنی خوبیوں کا محاکمہ کیجیے۔

10۔ (A) فسانہ عجائب کے اہم کرداروں کا تعارف کرائیے۔   (یا)

    (B) رجب علی بیگ سرورؔ کی داستان نگاری کا تنقیدی جائزہ لیجیے۔

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FACULTY OF COMMERCE
M.COM (ALL COURSES) I SEMESTER (CBCS) EXAMINATIONS, FEB-2025
CORPORATE FINANCIAL ACCOUNTING
PAPER - III

Time: 3 HRS]   [Max. Marks: 80

SECTION – A (5 X 4 = 20 Marks)

1. **Answer ALL Questions**

   a. Define Company

   b. What is Absorption?

   c. What do you mean by Inflation Accounting?

   d. Define Investment Accounting.

   e. What is Double Accounting?

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

2. A) What is Goodwill? Explain various methods to calculate Goodwill.

   OR

   B) Your client intends to invest not more than Rs. 20,000 in Equity shares of ABC Ltd. and wants you to advise him the maximum number of shares he can expect to acquire with the said amount on the basis of the following information available to him.

   Issued and paid up capital:

6% Preference Shares of Rs.100 each	5,00,000
Equity Shares of Rs.10 each	3,00,000
	8,00,000

   Average net profits of the business is Rs. 57, 000. Expected normal yield is 7% in case of such Equity Shares.

   Total Tangible Assets (other than Goodwill) Rs. 9,49,000 and the total outside liabilities Rs.95,000.

   Goodwill is to be calculated at 5 years purchase of super profits, if any.

3. A) What do you mean by Purchase Consideration? Explain different types of calculating purchase consideration.

   OR

   B) The Deep Co. Ltd. and Mohan Co. Ltd. have agreed to amalgamate. A new company Suresh Co. Ltd. has been formed to take over the Assets and Liabilities of both the companies on 31st Dec.2021. After negotiation, the Assets of the companies have been agreed as shown in the following Balance Sheets

Liabilities	Deep Co. Ltd.	Mohan Co. Ltd	Assets	Deep Co. Ltd.	Mohan Co. Ltd
Share Capital: Shares of Rs. 10 each	2,50,000	2,50,000	Land & Building	1,25,000	1,50,000
Profit & Loss Account	12,500	25,000	Plant & Machinery	50,000	1,25,000
Reserve Fund	---	25,000	Furnitue	---	25,000
Sundry Creditors	20,000	25,000	Stock	65,000	10,000
			Sundry Debtors	30,000	10,000
			Cash at Bank	12,500	2,000
				---	3,000
	2,82,500	3,25,000		2,82,500	3,25,000

   Show how the amount payable to each company is arrived at, pass necessary journal entries in the books of liquidating companies.

4. A) What is price level accounting? Explain "Current Purchasing Power Accounting" and "Current Cost Accounting"

OR

B) From the information given below, ascertain the cost of sales and closing inventory under Current Purchasing Power Method if the organisation follows (i) First-in First-out (FIFO) system, and (ii) Last-in First-out (LIFO) system.

	Historical Cost	**General Price Index**
Inventory on 31-03-2018	48,000	200
Purchases During 2018-19	3,20,000	220 (Average for 2018-19)
Inventory on 31-03-2019	58,000	230

5. A) Discuss Advantages and Disadvantages of leasing.

OR

B) On 1-4-2018, Mr. Shekhar purchased 5000 equity shares of Rs.100 each in V Ltd. @120 each from a broker, who charged 2% brokerage. He incurred 50 paise per Rs.100 as cost of shares transfer stamps. On 31-1-2019 bonus was declared in the ratio of 1:2. Before and after the record date of bonus shares, the shares are quoted at Rs.175 per share and Rs.90 per share respectively. On 31-3-2019, Mr.Shekhar sold Bonus shares to a broker, who charged 2% brokerage.

Show the Investment Accounts in the books of Mr. Shekhar, who held the shares as Current Assets a closing value of investments shall be made at cost or market value, whichever is lower.

6. A) What do you mean by Human Resource Accounting? Explain the approaches of it.

OR

B) The following information is extracted from the books of New Electricity Company for the year ended 31st March 2020.

Net Profit before charging debenture interest	Rs. 68,50,000
12% debenture interest paid during the year	Rs. 10,20,000
Capital Base arrived by the company	Rs. 3,10,00,000
Reasonable return calculated by the Company	Rs. 41,50,500

You are required to indicate the disposal of surplus of the company.

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FACULTY OF SCIENCE
M. Sc (BOTANY) I SEMESTER (CBCS) EXAMINATIONS FEB 2025
BRYOPHYTA AND PTERIDOPHYTA
PAPER – III

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

SECTION - A (4 X 5 = 20 Marks)

1   **Answer ALL Questions**

     A   Porella structure

     B   Fossil bryophytes

     C   *Isoetes*

     D   Telome Theory

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

2   A   Write a detailed account on the reproduction of *Marchantia*

                                         OR

   B   Explain the structure and sexual reproduction in *Polytrichum*

3   A   Describe the structure and evolution of sporophyte of bryophytes

                                         OR

   B   Write about the economic importance of bryophytes

4   A   Discuss the reproduction methods in *Equisetum*

                                         OR

   B   Write about the Stelar Evolution in Pteridophytes

5   A   Write a detailed account on heterospory and seed habit

                                         OR

   B   Describe the general characters of *Lepidodendrales* with suitable diagrams

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FACULTY OF SCIENCE
M. Sc (COMP SCI) I SEMESTER (CBCS) EXAMINATIONS FEB 2025
JAVA PROGRAMMING
PAPER - III

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

SECTION - A (4 X 5 = 20 Marks)

1   **Answer ALL the questions**

a   List out basic concepts of OOPs.

b   Write a short note on Inheritance.

c   Write a brief note on Exception handling.

d   Write a short note on the String Class.

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

2   A   Explain with neat examples about Control Statements in Java.

OR

   B   Discuss in detail about:

     a) Inheritance   b) Abstraction   c) Encapsulation.

3   A   Define Static Methods. Explain in detail about Method Overriding with an example Java Program.

OR

   B   Define Access Control. Explain in detail how Multilevel inheritance is Achieved in Java through an example program.

4   A   What is a Package? Explain its types. Also discuss about Accessibility of Package and using Package Members.

OR

   B   i) Discuss in detail about Interfaces and Abstract Classes.

     ii) Write a java program to demonstrate Null-Pointer Exception.

5   A   What is the Main Thread? Explain in detail about Java Thread Model and list out Thread Priorities.

OR

   B   i) Explain about Random Access File.

     ii) Discuss in detail about String Operations and String Methods.

<p align="center">★★★★★</p>

FACULTY OF SCIENCE
M. Sc (FOOD SCI. & TECHNOLOGY) I SEM (CBCS) EXAMS, FEB 2025
TECHNOLOGY OF CEREALS, LEGUMESAND OIL SEEDS
PAPER - III

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

SECTION - A (4 X 5 =20 Marks)

1   **Answer ALL the questions**

   a   Explain accelerated aging of rice.

   b   Write byproducts of wheat milling along with their uses.

   c   Explain types and grades of corn.

   d   Explain the difference between vegetable protein isolate and vegetable protein concentrate along with their uses.

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

2   A   Discuss methods of parboiling of rice along with the nutritional advantages.

OR

   B   Briefly explain the rice milling machinery along with changes occurring in rice during cooking.

3   A   Briefly explain the roller flour milling operations of wheat.

OR

   B   Discuss the basic concepts of dough chemistry.

4   A   Discuss the general principles and machine operations involved during wet milling of corn.

OR

   B   Discuss briefly the applications corn products.

5   A   Discuss the process for refining of oil.

OR

   B   Describe the process for preparation of vegetable protein concentrate.

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FACULTY OF SCIENCE
M. Sc (FOOD SCIENCE) I SEM (CBCS R-24) EXAMINATIONS, FEB 2025
TECHNOLOGY OF MILK AND MILK PRODUCTS
PAPER – III

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

SECTION - A (4 X 5 = 20 Marks)

1   **Answer ALL the questions**

     a   Write about A1 and A2 milk.

     b   Explain defects in cream.

     c   Give a brief account on methods of manufacture of rasgolla.

     d   What is probiotic milk?

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

2   A   Describe the quality evaluation and process of testing milk at procurement site.

OR

   B   Describe the process of cleaning and sanitation of dairy equipment

3   A   Discuss the method of manufacture for condensed milk and evaporated milk

OR

   B   Describe the method of butter manufacture along with theories of churning

4   A   Discuss the technological aspects of softy manufacture.

OR

   B   Describe the method of manufacture for paneer and chhana

5   A   Describe the applications of new technologies such as membrane processing in the dairy industry.
OR
   B   Discuss in detail about fat replacement.

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FACULTY OF SCIENCE
M. Sc (MICROBIOLOGY) I SEMESTER (CBCS) EXAMINATIONS FEB 2025
RESEARCH METHODOLOGY & TECHNIQUES
PAPER – III

SECTION - A (4 X 5 = 20 Marks)

1 **Answer ALL Questions**

A   X-ray diffraction

B   Autoradiography

C   DMRT

D   DOS

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

2   A   Write about NMR & ESR spectroscopy.

OR

B   Describe the significance of Spectrophotometry and counter current distribution.

3   A   Explain Gel filtration process and affinity chromatography.

OR

B   Write critical notes on (i) Cell free extract, (ii) Use of mutants in study of metabolism.

4   A   Explain what are samples and sampling procedures?

OR

B   Write about t-test and F-test and their significance.

5   A   Explain the significance of windows and data interpretation.

OR

B   What is Plagiarism, IPR and its significance?

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FACULTY OF SCIENCE
M. Sc (CHEMISTRY) I SEMESTER (CBCS) EXAMINATIONS, FEB 2025
PHYSICAL CHEMISTRY
PAPER - III

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

SECTION - A (4 X 5 = 20 Marks)

1   **Answer ALL the questions**

a   Show that $\left(\frac{\partial T}{\partial V}\right)_S = \left(\frac{\partial P}{\partial S}\right)_V$ and $\left(\frac{\partial S}{\partial V}\right)_T = \left(\frac{\partial P}{\partial T}\right)_V$

b   Sketch the calomel electrode and explain its working.

c   i). Is this operator $\hat{p}_x = -\frac{ih}{2\pi}\frac{\partial}{\partial x}$ linear?

       ii). Check if e^{-3x} $(0, \infty)$ is a well-behaved function or not?

d   Explain the significance of potential energy surface diagram.

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

2   A   i). Obtain an expression for entropy as a function of P and T. (8M)

        ii). Discuss the various steps involved in the calculation of absolute entropy (S^υ) of nitrogen gas at 298 K and 1 atm.(7M)

OR

  B   i). What is phase equilibrium? Derive Clausius-Clapeyron equation and give its limitations. (11M)

        ii).The vapor pressures of ice at 268 K and 273 K are 2.965 and 4.560 torr respectively. Estimate the heat of sublimation of ice. (4 M)

3   A   i). Derive an expression for liquid junction potential and explain how it can be eliminated. (8M)

        ii). Describe various potentiometric titrations.(7M)

OR

  B   i). Explain about the significance of decomposition potential and overpotential. (6 M)

        ii). Derive Debye-Huckel-Onsager equation and discuss its validity. (9M)

4   A   i). Write the postulates of quantum mechanics. (8M)

        ii). Prove that eigen values of a Hermitian operator are real. (7M)

OR

  B   i). Derive an expression for energy of a particle in a 3-D box and discuss the degeneracy of their energy levels. (10M)

        ii).Discuss the significance of uncertainty principle and calculate the uncertainty in the momentum of an electron if uncertainty in its position is 1 Å. (5M)

5   A   i). Discuss the thermodynamic formulation of transition state theory and explain the significance of $\Delta S^{\neq}$. (8M)

        ii). Derive the rate law for H_2-Br_2 reaction. (7M)

OR

  B   i). Discuss the Hammett relationship and the reasons for the deviations from Hammett correlations with examples. (8M)

        ii). Explain the primary salt effect on the kinetics of reactions in solutions. (7M)

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FACULTY OF SCIENCE
M. Sc (NUTRITION& DIETETICS) I SEMESTER (CBCS) EXAMS, FEB 2025
HUMAN PHYSIOLOGY
PAPER - III

TIME: 3 HRS]   [MAX. MARKS: 80

SECTION - A (4 X 5 = 20 Marks)

1   **Answer ALL the questions**

a   Explain the organic constituents of urine.

b   Write about Parkinson's disease.

c   Explain the factors affecting BP and heart rate.

d   Explain the mechanism of action of hormones.

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

2   A   Discuss the role of prebiotics and probiotics in maintenance of health of digestive system.

OR

B   Describe in detail the urine formation

3   A   Give a brief account on (i)neurotransmitters. (ii)cyanosis.

OR

B   Give a brief account on (i)peripheral nervous system. (ii)functions of testosterone

4   A   Discuss the mechanism of blood coagulation.

OR

B   Describe the systemic and portal circulation.

5   A   Discuss the secretions of adrenal medulla and their functions.

OR

B   Give a brief account on (i)structure of islets of Langerhans. (ii)functions of thyroid hormones.

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FACULTY OF SCIENCE
M.SC. (ENGG. PHYSICS AND INSTR. & PHYSICS) I SEM (CBCS) EXAMINATIONS FEB 2025
SOLIDSTATE PHYSICS
PAPER – III

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

SECTION – A   (4 X 5 = 20 Marks)

1. **Answer ALL the following**

   a. List out the similarities between metal and semiconductor nanoparticles.

   b. What are elastic vibrations in the crystal, discus the concept of phase and group velocity?

   c. What is Hall Effect?

   d. What is Curie-Weiss law?

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

2. a) List out the seven crystal systems in detail.

   b) Bragg's law.

(OR)

   c) Discuss any two methods of nanomaterials preparation.

3. a) Obtain the dispersion relationsfor acoustic and optical branch by solving the equation of motion of an atomand plot them with k.

(OR)

   b) Explain how Debye theory rectified the flaws in Einstein's theory specific heat.

4. a) define i) Bloch wave function ii) Brillouin zones

   b) Explain how Kronig-Penny model explain the metallic and semiconducting properties materials.

(OR)

   c) Derive the expression for charge carrier density in an intrinsic semiconductor.

5. a) Discuss the Langevin theory of diamagnetism in brief and obtain the expression its susceptibility.

   b) Quenching of orbital angular momentum.

(OR)

   c) Show that the exchange field is of the order of 10^3 T.

   d) Define the terms i) domains ii) magnetic anisotropy energy iii) Magnons

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FACULTY OF SCIENCE
M. Sc. (STATISTICS) I SEMESTER (CBCS) EXAMINATIONS, FEB 2025
DISTRIBUTION THEORY
PAPER – III

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

SECTION - A (4 X 5 = 20 Marks)

1   **Answer ALL the questions**

a   Write any five the applications of Pareto distribution in detail?

b   Obtain the double truncated at (a, b) of normal distribution?

c   What is the sampling distributions of a statistic? Illustrate it for the sample median.

d   Obtain the distribution of order statistics$x_{(n)}$, if the sample of size n=5 drawn from exponential(θ=2).

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

2   a   Define Lognormal distribution. State all its properties. Write in detail any three real time applications of Log normal distribution.

OR

b   Define Weibull distribution with two parameters and obtain its characteristic function. Hence obtain its mean and variance.

3   a   Derive the general relation of mean and variance of a power series distribution$f(x,\theta)$.

OR

b   Obtain the conditional density of X/Y=y of Bivariate Normal distribution?

4   a   Derive the distribution of central t- distribution, and write its properties and applications.

OR

b   Derive the distributions and show that the sample mean and sample variance are independent.

5   a   If X follows normal distribution, then obtain the distribution of quadratic form$X'AX$.

OR

b   If $x_1,x_2,\ldots x_5$the sample of size n=5 is drawn from Uniform (0,1)then obtain the distribution of range $(X_{(5)} - X_{(1)})$.

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FACULTY OF SCIENCE
M. Sc (DATA SCIENCE) I SEMESTER (CBCS R-23) EXAMINATIONS, FEB 2025
SOFTWARE ENGINEERING
PAPER - III

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

SECTION - A (4 X 5 = 20 Marks)

1   **Answer ALL the questions**

   a   Discuss Psychology of Software Engineering briefly.

   b   List out User Interface Design Rules.

   c   Write a short note on Software Quality.

   d   Explain briefly about Forward Engineering.

SECTION - B (4 X 15 = 60 Marks)

Answer ALL questions

2   A   Discuss in detail the following:

      i) Changing nature of Software   ii) Software Process   iii) Unified Process.

OR

   B   Write a detailed note on Software Team Structures & Software Engineering Using the Cloud.

3   A   Write a detailed note on Eliciting Requirements, Developing Use Cases & Building the Analysis Model.

OR

   B   What is a Component? Explain in detail about Designing Class-Based Components and Conducting Component-Level Design.

4   A   Define Reviews. Explain in detail about Informal Reviews and Formal Technical Reviews.

OR

   B   What is Software testing? Distinguish between White-Box Testing and Black-Box Testing.

5   A   Explain in detail about the Project Management Spectrum and W5HH Principle.

OR

   B   Discuss in detail about Metrics for Software Quality and Integrating Metrics within the Software Process.

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FACULTY OF SCIENCE
M. Sc. (MATHEMATICS) I SEMESTER (CBCS) EXAMINATIONS, FEB 2025
DISCRETE MATHEMATICS
PAPER - III

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

SECTION - A (4 X 5 = 20 Marks)

1   **Answer ALL the questions.**

     a   Explain contrapositive and converse.

     b   Compute the number of arrangements of letters in the word TALLAHASSEE.

     c   Evaluate a generating function for a_r = the number of ways of distributing r similar balls into n numbered boxes where each box is non empty.

     d   Show that in any Boolean algebra if $a \cdot x = 0$ and $a + x = 1$, then $x = \bar{a}$.

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

2   A   a)   Define tautology, contradiction and contingency along with their truth tables.
            b)   Verify the De-Morgan's laws using truth tables.[6+9 = 15M]

OR

   B   a)   Explain universal and existential quantifiers.
            b)   Symbolize the following arguments and check for its validity:
                 Every living thing is a plant or an animal.
                 David's dog is alive and it is not a plant.
                 All animals have hearts.
                 Hence, David's dog is alive and it is not a plant.   [5+10 = 15M]

3   A   Six distinct symbols are transmitted through a communication channel. A total of 12 blanks are to be inserted between the symbols with at least 2 blanks between every pair of symbols. In how many ways,can the symbols and blanks be arranged?

OR

   B   What is the principle of inclusion-exclusion? Suppose that 200 faculty members can speakFrench and 50canspeakRussian, while only 20 can speak both Frenchand Russian.How many faculty members can speak either French orRussian?

4   A   Usethe method of generating function to determine the explicit expression for a_n such that $a_n - 7a_{n-1} + 10a_{n-2} = 0$, $n \geq 2$ and $a_0 = 10, a_1 = 41$.

OR

   B   Solve the recurrence relation $a_n + a_{n-1} - 5a_{n-2} + 3a_{n-3} = 0$, $n \geq 3$ with the initial conditions $a_0 = 0, a_1 = 1$ and $a_2 = 2$.

5   A   Estimate the number of the elements in the Boolean algebra of all functions from a set A containing n elements to the set {0,1}.

OR

   B   Differentiate the conjunctive and disjunctive normal forms. Obtain the principal conjunctive normal form of $(P\sim \lor Q) \land (Q \lor R) \land (\sim P \lor Q \lor \sim R)$.

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FACULTY OF SCIENCE
M. Sc (ZOOLOGY) I SEMESTER (CBCS) EXAMINATIONS, FEB 2025
ANIMAL PHYSIOLOGY AND ETHOLOGY
PAPER - III

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

SECTION - A (4 X 5 = 20 Marks)

1   **Answer ALL the questions**

   a   Respiratory Quotient

   b   Physiology of Heart beat

   c   Urea cycle

   d   Dance language of honey bee

SECTION - B (4 X 15 = 60 Marks)

Answer ALL questions

2   A   Write the anatomy of digestive system and physiology of digestion process.

OR

   B   Describe the neural and hormonal control of breathing.

3   A   Write the components of blood and biochemical factors involved in blood coagulation.

OR

   B   Give an account on physiology of Urine formation and role of hormones in renal function.

4   A   Explain the fundamentals nerve impulse and role of ionic channels.

OR

   B   Write the types of muscles and their functions.

5   A   Define Ethology. Add a note on Instinct and learning aspects with examples.

OR

   B.   What are pheromones? Write about defensive secretions of insects.

★★★★★

FACULTY OF SOCIAL SCIENCES
M. A (ECONOMICS) I SEMESTER (CBCS) EXAMINATIONS FEB 2025
AGRICULTURAL ECONOMICS
PAPER - IV

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

SECTION - A (5 X 4 = 20 Marks)

1   **Answer ALL the questions**

a   Define Traditional Agriculture.

b   Write a note on Technical Change

c   Briefly explain the Supply of Inputs.

d   Write a short note on Public Investment.

e   Write a note on Agricultural commodities.

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

2   A   Explain the nature and scope of agricultural and rural economics.

OR

B   Explain the role of agriculture in economic development.

3   A   Analyze the labour absorption in agriculture marketing.

OR

B   Write about the agricultural markets.

4   A   Explain the terms of trade between agricultural and non-agricultural prices.
.

OR

B   Analyze the objectives of agricultural price policy.

5   A   Discuss the distribution of gains from technological change.

OR

B   Examine the role of capital formation in Indian agriculture.

6   A   Explain the globalization of Indian economy and problems of Indian agriculture.

OR

B   Write about the impact of World Trade Organization on Indian Agriculture.

★★★★★

FACULTY OF SOCIAL SCIENCES
M. A (SOCIOLOGY) I SEMESTER (CBCS) EXAMINATIONS FEB 2025
INDUSTRIAL SOCIOLIOGY
PAPER – IV (A)

TIME: 3 HRS]   [MAX. MARKS: 80

SECTION - A (5 X 4 = 20 Marks)

1   **Answer ALL the questions**

a   What is Industrial Sociology

b   What are the functions of Industrial management

c   Mention Obstacles for Workers Participation.

d   What is a strike

e   What are the different types of incentives

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

2   A   Define Industrial organization and discuss the impact of industrial revolution on society

OR

B   Discuss the changing structure of modern industrial enterprise

3   A   Discuss Karl Marx views on Industry and society

OR

B   Explain Elton Mayo's – "Human Relations Approach"

4   A   Discuss the origin and growth of Trade union movement in India

OR

B   Write a brief note on the functions of Trade Unions in India.

5   A   'Do you think collective bargaining is good approach to settle industrial dispute – discuss

OR

B   Discuss the purpose and procedure of Industrial Dispute Act 1947

6   A   What is Labour welfare scheme, discuss its types and functions

OR

B   What are the provisions and benefits under the Compensation Legislation act -1923

★★★★★

FACULTY OF SOCIAL SCIENCES
M. S. W I SEMESTER (CBCS) EXAMINATIONS FEB 2025
SOCIALDEVELOPMENT AND SUSTAINABLE DEVELOPMENT
PAPER - IV

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

SECTION - A (5 X 4 = 20 Marks)

1   **Answer ALL the questions**

a   Factors of Social Development

b   Developed economy

c   Globalisation

d   Role of Therapist

e   Social Policy

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

2 A Describe the concept of social development and its importance in modern societies.

OR

B Evaluate the role of community participation in implementing strategies or social development

3 A Compare and contrast the charecteristics of underdeveloped, developing economies

OR

B Analyze the relationship between economic development and social welfare policies in transforming societies.

4 A Define Globalization and its impact on developing societies Explain the roles of Word Bank, WTO in Global economic governance

OR

B Evaluate different strategies for achieving sustainable development goals.

5 A Name three components of sustainable development

OR

B What are the pre requisites for sustainable development?

6 A Discuss the importance international cooperation in addressing global social welfare challenges

OR

B Examine the effectiveness of social welfare programmes in addressing social inequality.

★★★★★

FACULTY OF ARTS
M.A (TELUGU) I SEMESTER (CBCS) EXAMINATIONS, FEB 2025
సంస్కృతం - 1
పేపర్ - IV

సమయం: 3 గంటలు]   [గరిష్ట మార్కులు : 80

సెక్షన్ - ఎ (5 X 4 = 20 మార్కులు)

1   ఈ క్రింది వానిపై లఘు వ్యాఖ్య వ్రాయండి

ఎ   చతుర్వేదాలు

బి   లఘు కావ్యలక్షణాలు

సి   భాసుడు

డి   రఘువంశం

ఇ   రామ శబ్దం

సెక్షన్ – బి (5 X 12 = 60 మార్కులు)
అన్ని ప్రశ్నలకు సమాధానాలు వ్రాయండి

2   ఎ   భారతీయ సంస్కృతిలో సంస్కృత భాషా వైశిష్ట్యాన్నివివరించండి

లేదా

బి   వేదాంతంగా ఉపనిషత్తుల విశిష్టతను చర్చించండి

3   ఎ   కావ్య లక్షణాలను సోదాహరణంగా వివరించండి

లేదా

బి   నాటక లక్షణాలను సోదాహరణంగా వివరించండి

4   ఎ   వ్యాసుని మహాభారత విశిష్టతను వివరించండి

లేదా

బి   మాఘ శిశుపాలవధ కావ్య విశిష్టతను విశదీకరించండి

5   ఎ   కాళిదాసు కవితా ప్రతిభను మీ పాఠ్యం ఆధారంగా వివరించండి

లేదా

బి   రఘువంశ ప్రథమ సర్గ సారాన్ని వివరించండి

6   ఎ   మాతృ, మరుత్, మధు శబ్దాలను అన్ని విభక్తులలో వ్రాయండి

లేదా

బి   పఠ, నృత్య గమ్ ధాతువుల లట్, లోట్ రూపాలను వ్రాయండి

★★★★★

FACULTY OF ARTS
M. A. (ENGLISH) I SEMESTER (CBCS-NEW) EXAMINATIONS, FEB 2025
ROMANTIC AGE
PAPER - IV

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

SECTION-A (5 X 4 = 20 Marks)

1   **Answer ALL the following questions**

A   Write a short note on Pre-Romantics Poets?

B   Words Worth's Poetic Theory

C   Write a short note Shelley's poetic inspiration by using the skylark as a symbol?

D   What is the importance of social class in Jane Austen's *Pride and Prejudice?*

E   What does Lamb tell in *Dream- Children: A Reverie?*

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

2   A   Write an essay on Fancy and Imagination?

OR

B   Define Medievalism? What are the features of medievalism?

3   A   Write an essay on the central idea of Wordsworth's *Anecdote for Fathers?*

OR

B   Critically examine *The Rime of Ancient Mariner* as a Christian allegory?

4   A   Write a note on sensuous elements in John Keat's *Ode to a Nightingale?*

OR

B   Describe Shelley's belief in the West Wind as a 'destroyer and preservation'?

5   A   Sketch the character of Mr Fitzwilliam Darcy?

OR

B   Write an essay on the main theme of Mary Shelley's *Frankenstein?*

6   A   Write a critical analysis of Charles Lamb's *'The Race of Men'?*

OR

B   Write an essay on the central idea of William Hazlitt's *The Joe?*

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FACULTY OF ARTS
M.A. (ENGLISH) I SEM (CBCS-OLD) EXAMINATIONS FEB 2025
ENGLISH LANGUAGE AND PHONETICS
PAPER- IV

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

SECTION-A (5 X 4 = 20 Marks)

1   **Answer ALL the following questions**

A   Discuss Cultural Transmission as an important aspect of human language?

B   Air-Stream Mechanism

C   Elison

D   Phonemes and Allophones

E   Received Pronunciation

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

2   A   What are the difference between Animal and Human Language?

OR

B   What is Non-Verbal Communication? What are the aspects relating to Body Language?

3   A   Explain the mechanism of speech describing the role of the vocal organs in the transmission of speech sounds?

OR

B   Write an essay on the description of Consonant Sounds with examples?

4   A   Write an essay on Word Accent?

OR

B   Write an essay on Consonant Clusters with examples?

5   A   Discuss the important concepts of Morphology?

OR

B   Write an essay on Syntax?

6   A   Write an essay on Homophones, Homonyms and Minimal Pairs?

OR

B   Define Semantics? Write in detail on the scope of semantics with examples?

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FACULTY OF ARTS

M.A. (Urdu) I - Semester Examination (CBCS)

Paper - IV   چوتھا پرچہ

Deccani Adab (دکنی ادب)

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

Answer All the questions.

(حصہ الف)

نوٹ :   تمام سوالات حل کیے جائیں۔ ہر سوال کے چار (4) نشانات ہیں۔ ہر جواب پندرہ (15) سطروں میں تحریر کیا جائے۔   (5 x 4 = 20)

1۔   دکنی شاعری کی امتیازی خصوصیات بیان کیجیے۔

2۔   اشرف بیابانی پر مختصر نوٹ تحریر کیجیے۔

3۔   نصرتی کی ادبی خدمات کا تعارف کرائیے۔

4۔   میراں جی خدا نما کے بارے میں ایک اختصاریہ لکھیے۔

5۔   سراج اورنگ آبادی کے سوانحی حالات قلم بند کیجیے۔

(حصہ ب)

نوٹ :   تمام سوالات حل کیے جائیں۔ ہر سوال کے بارہ (12) نشانات مختص ہیں۔ ہر سوال کا جواب چار (4) صفحات سے زیادہ نہ ہو۔

(5 x 12 = 60)

6۔   (A)   اردو غزل کی تاریخ میں ولی کے مقام کا تعین کیجیے۔   (یا)

(B)   ابن نشاطی کی مثنوی ''پھول بن'' کے پلاٹ کا خلاصہ تحریر کیجیے۔

7۔   (A)   قطب شاہی دور میں دکنی مثنوی کے ارتقا کا جائزہ لیجیے۔   (یا)

(B)   ملا وجہی کی ادبی خدمات پر تبصرہ کیجیے۔

8۔   (A)   برہان الدین جانم کے حالات زندگی اور تصانیف پر روشنی ڈالیے۔   (یا)

(B)   عادل شاہی حکمرانوں کی تہذیبی خدمات کا تذکرہ کیجیے۔

9۔   (A)   دکنی زبان کے آغاز و ارتقا پر روشنی ڈالیے۔   (یا)

(B)   دکنی زبان کی لسانی خصوصیات بیان کیجیے۔

10۔   (A)   بہمنی سلطنت کے قیام و استحکام پر روشنی ڈالیے۔   (یا)

(B)   بہمنی دور کی مثنویوں کا تعارف کرائیے۔

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FACULTY OF COMMERCE
M.COM (ALL COURSES) I SEMESTER (CBCS) EXAMINATIONS FEB 2025
FINANCIAL MANAGEMENT
PAPER - IV

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

SECTION – A (5 X 4 = 20 Marks)

1. **Answer ALL Questions**

    a. What is finance function?

    b. Why does money have time value?

    c. Give the mean of dividends.

    d. What is operating cycle?

    e. What is IRR?

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

2. A) What is financial Management? Explain the nature and scope of it.

OR

B) "The Profit maximization is not an operationally feasible criterion" Do you agree? Illustrate your views.

3. A) Ms. Pradham company is expected an operating profit at Rs.1,00,00 whose cost of is 12.5 percent. The company has capital of Rs. 4,00,000 at 8 percent. You are required to calculate the total value of the firm and equity capital cost (K_e).

   Case (1) When company increase debt from Rs. 4,00,000 to Rs. 6,00,000 and uses proceeds to repurchase equity shares.

   Case (2) When company reduces debt to Rs. 2,00,000 by fresh issue of equity shares of the same amount.

OR

B) "NI approach is the relevant to the capital structure and value of the firm" Discuss, with illustration.

4. A) What is capital budgeting? Explain the process and significance of capital budgeting.

OR

B) A firm has two investment opportunities, each costing Rs. 1,00,000 and each having an expected project as shown below:

Year	1	2	3	4
Project A (Rs.)	50,000	40,000	30,000	10,000
Project B (Rs.)	20,000	40,000	50,000	60,000

After giving due consideration to the risk criteria in each project the management has decided that project A should be evaluated at a 10 per cent cost of capital and project B, a risky project with a 15 per cent cost of capital.

Compute the NPV and suggest the course of action for the management if:
a) Both the projects are independent.
b) Both are mutually exclusive.

5. A) What do you mean by Working Capital? Explain the factors Influencing Working Capital.

OR

B) From the following information of ABC Ltd., estimate the working capital needed to finance a level of activity of 1,10,000 units of production after adding a 10 percent safety contingency.

Particulars	Cost per unit (Rs.)
Raw Materials	78
Direct labour	29
Overheads (excluding depreciation)	58
Total Cost	**165**
Profit	24
Selling Price	**189**

Additional Information:

Average raw materials in stock: One Month
Average Materials-in-progress (50% completion stage): Half a month
Average finished goods in stock: One month
Credit allowed by suppliers: One month
Credit allowed to customers: Two months
Time log in payment of wages: one and half weeks
Overhead expenses: One month

6. A) Discuss in detail the Gorden's dividend theory.

OR

B) The following information is available in respect of a firm:
Earnings per share (EPS) Rs. 40
Capitalisation Rate (K_0 or K_e) 10 per cent
Assumed rate of return on investment (r)
(A) 13 per cent: (B) 10 per cent: (c) 8 per cent.
You are required, to show the effect of dividend payment on the market price per share using Walter's model, when dividend payout ratio is (a) 0 per cent (b) 25 per cent (c) 37.5   per cent (d) 50 per cent (e) 75 per cent (f) 100 per cent.

★★★★★

FACULTY OF SCIENCE
M. Sc (BOTANY) I SEMESTER (CBCS) EXAMINATIONS FEB 2025
TAXONOMY OF ANGIOSPERMS AND MEDICINAL PLANTS
PAPER - IV

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

SECTION - A (4 X 5 = 20 Marks)

1   **Answer ALL Questions**

A   Phenetic system of classification

B   Rules of priority

C   Compare the inflorescence of cyperaceae and poaceae

D   Development of plant based medicine

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

2   A   Give a critical account on phylogenetic systems by Cronquist and Takhtajan.

OR

B   Explain the detailed account on cytology and phytochemistry in taxonomic evidence.

3   A   Write a detailed account on salient features of ICBN concept and typification.

OR

B   Describe the species concept of biosystematics.

4   A   Give a comparative study on Amaranthaceae and Chenopodiaceae and their treatment in recent systems.

OR

B   Describe in detail the inflorescence and detailed floral structure of Poaceae.

5   A   Describe the morphology, active principles and medicinal value of *Asparagus racemosus.*

OR

B   Explain the morphology, active principles and medicinal value of *Gymnemasylvestre.*

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FACULTY OF SCIENCE
M. Sc (COMP SCI) I SEMESTER (CBCS) EXAMINATIONS FEB 2025
SOFTWARE ENGINEERING
PAPER - IV

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

SECTION - A (4 X 5 = 20 Marks)

1   **Answer ALL the questions**

    a   Define Agility.

    b   List out Design Concepts.

    c   Explain briefly about Software Reliability.

    d   Define Risk Mitigation.

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

2   A   Explain in detail about the following:

      a) Specified Process Models.   b) Agile Process and   c) unified Process.

OR

   B   Write a detailed note on Extreme Programming and Psychology Software Engineering.

3   A   i) Explain in detail about Class-Responsibility-Collaborator Modeling.   **[8M]**

      ii) Discuss about User Interface Design Rules.   **[7M]**

OR

   B   What is a Component? Write a detailed note on Designing Class-based Components and Conducting Component-Level Design.

4   A   Write a detailed note on following:

      a) Defect Amplification and Removal   b) Testing Fundamentals   c) Formal Technical Reviews.

OR

   B   What is System Testing? Explain in detail about Black-Box Testing and White-Box Testing.

5   A   Explain in detail about The Project Management Spectrum and Metrics in the Process and Project Domains.

OR

   B   What is Software mMaintenance? Discuss in detail about Forward Engineering and Reverse Engineering.

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FACULTY OF SCIENCE
M. Sc (FOOD SCI & TECHNOLOGY) I SEM (CBCS) EXAMINATIONS, FEB 2025
FERMENTED   FOODS & BEVERAGE TECHNOLOGY
PAPER - IV

TIME: 3 HRS]   [MAX. MARKS: 80

SECTION - A (4 X 5 = 20 Marks)

1   **Answer ALL the questions**

a   What are oriental fermented foods explain with the help of examples.

b   Write the BIS quality standards for natural spring water.

c   Write about carbonation of soft drinks.

d   Write about fermented beverages with help of examples.

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

2   A   Give a brief account on (i) cucumber pickles (ii) tofu

OR

B   Give a brief account on (i) fermented milks. (ii) Indian traditional fermented foods.

3   A   Describe the manufacturing process of raw and processed water.

OR

B   Give a brief account on (i) types of package drinking. (ii) BIS quality standards for flavoured water and carbonated water.

4   A   Discuss in detail the speciality beverages.

OR

B   Discuss the technology of low calorie and dry beverages.

5   A   Briefly explain the equipment's used for brewing and distillation.

OR

B   Describe the manufacturing process for distilled spirits.

★★★★★

FACULTY OF SCIENCE
M. Sc (FOOD SCIENCE) I SEMESTER (CBCS R-24) EXAMINATIONS FEB 2025
RESEARCH METHODS STATISTICS AND COMPUTER APPLICATIONS
PAPER – IV

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

SECTION - A (4 X 5 = 20 Marks)

1   **Answer ALL the questions**

    a   Explain the objectives of research.

    b   Write the properties of normal distribution.

    c   How can you insert picture in Power Point?

    d   Write about SPSS.

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

2   A   Discuss in detail the types of research.

OR

    B   Discuss in detail the sampling techniques.

3   A   Discuss in detail the measures of central tendency and its applications.

OR

    B   Describe the standard error and its applications

4   A   Discuss the designing of tables and graphs for research purpose

OR

    B   Discuss animation in MS Power Point and its application.

5   A   Discuss the features of SPSS for Windows.

OR

    B   Discuss the process of report writing for investigative research

★★★★★

FACULTY OF SCIENCE
M. Sc (MICROBIOLOGY) I SEMESTER (CBCS) EXAMINATIONS FEB 2025
MICROBIAL BIOCHEMISTRY
PAPER – IV

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

SECTION - A (4 X 5 = 20 Marks)

1   **Answer ALL Questions**

   A   Preparation of buffers

   B   Bacterial lipids

   C   Purification of enzymes

   D   Allosteric enzymes

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

2   A   Discuss on Electron Transport System and oxidative phosphorylation

OR

   B   Describe glycolysis with reference to EMP and HMP pathways

3   A   Discuss on the structure, composition, and properties of DNA

OR

   B   Discuss on the structures and functions of monosaccharides

4   A   Write on the properties and metabolism of amino acids

OR

   B   Explain the classification methods and nomenclature of enzymes

5   A   Write on the methods to control enzymes as well as mechanism of enzyme action

OR

   B   Explain the metabolic compartmentation in relation to enzymes. Add a note on enzymes and secondary metabolites

★★★★★

FACULTY OF SCIENCE
M. Sc (CHEMISTRY) I SEMESTER (CBCS) EXAMINATIONS FEB 2025
ANALYTICAL TECHNIQUES & SPECTROSCOPY – I
PAPER - IV

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

SECTION - A (4 X 5 = 20 Marks)

1. **Answer ALL Questions**

   a) Write a note on various separation techniques.

   b) Explain the changes brought in a molecule on interaction with different wavelengths of light.

   c) What are photometric titrations? Explain

   d) Write a note on exchangeable protons.

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

2. (a) Discuss the various types of detectors used in HPLC analysis.

   (b) Write a note on the analysis of hydrocarbons by GC.

OR

   (c) Write the principle and instrumentation of HPLC.

   (d) Explain the assay of paracetamol by HPLC.

3. (a) Explain the possible modes of vibrations in a given molecule.

   (b) Write a note on overtones and hot bands.

OR

   (c) Write the applications of IR spectroscopy.

   (d) Write a note microwave spectroscopy.

4. (a) Write a note on the charge transfer spectra with an example.

   (b) Write a note on the factors affecting the absorption maxima.

OR

   (c) Explain the electronic transitions of a molecule with a neat diagram.

   (d) Write a note on Beer's law and its applications.

5. (a) Explain the role of lanthanide shift reagents in the H^1 NMR spectra.

   (b) Draw and explain the H^1 NMR spectra of ethyl alcohol and benzaldehyde.

OR

   (c) Explain NOE with an example.

   (d) Write a note on the practicality/application of the coupling constants.

★★★★★

FACULTY OF SCIENCE
M. Sc (NUTRITION & DIETETICS) I SEM (CBCS) EXAMINATIONS FEB 2025
PRINCIPLES OF DIETETICS
PAPER - IV

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

SECTION - A (4 X 5 = 20 Marks)

1   **Answer ALL the questions**

   a   Write about MUST.

   b   Explain the complications of enteral nutrition.

   c   Explain the dietary management for irritable bowel syndrome.

   d   What are antihistamines explain.

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

2   A   Discuss the role of dietician in a community.

OR

   B   How would you asses the nutritional status in a community, briefly explain the different methods used in nutritional assessment.

3   A   Briefly discuss the types of parenteral and peripheral parenteral nutrition along with advantages and disadvantages.

OR

   B   Discuss the metabolic changes occurring in burns along with required support in burns.

4   A   Discuss in detail the treatment and dietary management for patients suffering from peptic ulcer.

OR

   B   Give a brief account on (i) dietary management for patients suffering from constipation (ii) aetiology and symptoms lactose intolerance.

5   A   Discuss the pharmacokinetics of drugs.

OR

   B   Discuss the metabolic changes and dietary management during fevers of long duration with reference to tuberculosis.

★★★★★

FACULTY OF SCIENCE
M.SC. (ENGG. PHYSICS AND INSTR. & PHYSICS) I SEM (CBCS) EXAMINATIONS FEB 2025
ELECTRONIC DEVICES AND CIRCUITS
PAPER – IV

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

SECTION - A (4 X 5 = 20 Marks)

1   **Answer ALL the questions**

    a   What is working the principle of a Photo Diode?

    b   What is bias stability? Explain.

    c   What is Emitter Follower? Explain in brief .

    d   Draw the Circuit of Hartley Oscillator and Explain it Briefly.

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

2   A   Explain in detail about LED and Describe Its Applications.

OR

    B   Discuss the Construction, working and V-I Characteristics of UJT.

3   A   Describe the collector-to-Emitter bias and Discuss about stabilization against variation of V_{BE} and for self-bias circuit?

OR

    B   What are different types of IC Voltage regulators and Explain in detail about LM78XX and LM 79XX.

4   A   Discuss the Working Principle of RC Coupled Amplifier with neat circuit diagram and explain about Frequency Response

OR

    B   Explain the working of class AB and class C- tuned amplifier.

5   A   What is Barkhausen Criterion? Explain the Construction and Working of Phase Shift Oscillator.

OR

    B   Explain construction and working of Monostable multivibrator with neat circuit diagram and Derive an expression for its frequency of oscillation?

★★★★★

FACULTY OF SCIENCE
M. Sc. (STATISTICS) I SEMESTER (CBCS) EXAMINATIONS FEB 2025
THEORY OF ESTIMATION
PAPER – IV

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

SECTION - A (4 X 5 = 20 Marks)

1   **Answer ALL the questions**

    a   What is Bhattacharya bound? What is its importance?

    b   How Bias can be reduced through Bootstrap Principle

    c   Obtain estimation of variance using the method of moments estimation for exponential.

    d   Derive the shortest length confidence interval of Binomial distribution

SECTION - B (4 X 15 = 60 Marks)

Answer ALL Questions

2   A   (i)   Let $x_1, x_2, \ldots x_n$ be an independent random sample of size n from a Normal population with mean 0 and variance σ^2. The minimum variance bound for the estimator σ^2.

        (ii)   What is Fisher's information? Write its importance?

OR

  B   Let $x_1, x_2, \ldots x_n$ be an i.i.d. random sample of size n drawn from the population with density $f(x,\theta) = \theta x^{-\theta-1}, 0 < x < 1$ and $\theta > 0$ then the sufficient statistic for θ?

3   A   (i)   Show that a complete sufficient statistic is always a minimal sufficient statistic?

        (ii)   Explain how can you examine the estimator is complete? Illustrate with an example?

OR

  B   Obtain the estimation of bias inJackknife method when estimating variance?

4   A   Define consistent and asymptotically normal, and best and asymptotically normal estimator.Show that Method of Moment estimator is consistent and asymptotically normal estimator.

OR

  B   Show that Maximum likelihood estimator is consistent and asymptotically normal estimator.

5   A   Let $x_1, x_2, \ldots x_n$ be an independent random sample of size n from a population with distribution F(x), then obtain its U-statistic. Write its importance in statistics.

OR

  B   Obtain the confidence Interval for the estimation of Parameter $\theta$of exponential distribution using pivot method.

★★★★★

FACULTY OF SCIENCE
M. Sc (DATA SCIENCE) I SEMESTER (CBCS R-23) EXAMINATIONS FEB 2025
JAVA PROGRAMMING
PAPER - IV (B)

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

SECTION - A (4 X 5 = 20 Marks)

1   **Answer ALL the questions**

a   Discuss about Event Handling in Java.

b   Explain about Servlet Lifecycle.

c   Write a short note on HQL.

d   Explain briefly about Page Navigation.

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

2   A   Write a Java Program to design a Registration Page that uses various AWT Components.

OR

B   Discuss about RMI Interfaces and Classes and demonstrate Compiling and Running the program with an example.

3   A   Discuss in detail about Passing Parameters to Servlets and Retrieving Servlets.

OR

B   What is Session Tracking? Explain in detail about Sharing Session and Application Data.

4   A   Explain in detail about Scrollable and Updatable Resultset. Also explain about Result Set Metadata.

OR

B   Discuss about Using Native SQL Query, Named Queries. Also explain about Generator Class.

5   A   Discuss in detail about JNDI.

OR

B   Define J2EE. Explain in detail about EJB and list out Applications using Session Beans and Entity Beans.

★★★★★

FACULTY OF SCIENCE
M. Sc (DATA SCIENCE) I SEMESTER (CBCS R-23) EXAMINATIONS FEB 2025
PRINCIPLES OF DATA SCIENCE
PAPER – IV (A)

TIME: 3 HRS]   [MAX. MARKS: 80

SECTION - A (4 X 5 = 20 Marks)

1   **Answer ALL the questions**

   a   Discuss briefly about Measurement of Scales.

   b   Explain briefly about Data Modelling Process.

   c   Define Classification Algorithms.

   d   What is Cluster Analysis?

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

2   A   Discuss in detail about Parametric & Non-Parametric Tests.

OR

   B   What is Data? Discuss about various Data Types. Explain the significance of understanding data with descriptive statistics and data visualization and data pre-processing steps.

3   A   Explain in detail about the following:
       i)   Concepts of Modern Evolution
       ii)   Underfitting and Overfitting
       iii)   K fold and leave out one approaches.

OR

   B   Distinguish between Supervised and Unsupervised Learning.

4   A   Explain in detail about Support Vector Machines.

OR

   B   Write a detailed note on Decision Tree and Perceptron Learning.

5   A   Explain in detail about Agglomerative Hierarchical Cluster Techniques.

OR

   B   Discuss in detail about K-Means, K-Medoid and KNN.

★★★★★

FACULTY OF SCIENCE
M. Sc. (MATHEMATICS) I SEM (CBCS) EXAMINATIONS FEB 2025
ORDINARY DIFFERENTIAL EQUATIONS AND SPECIAL FUNCTIONS
PAPER - IV

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

SECTION - A (4 X 5 = 20 Marks)

1 **Answer ALL the questions.**

a Classify the ordinary points, regular singular points, and irregular singular points of the differential equation $x^2(x+1)^2 y'' + (x^2-1)y' + 2y = 0$ if they exist.

b Express the polynomial $f(x) = x^4 + 3x^3 - x^2 + 5x - 2$ in terms of Legendre polynomials.

c Prove or disprove that $J_{1/2}(x) = \sqrt{\dfrac{2}{n\pi}}\sin x$.

d Express the polynomial $f(x) = x^4 + 2x^3 + 2x^2 - x - 3$ in terms of Hermite polynomials.

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

2 A a) Define ordinary and singular points. Classify the types of singular points.
  b) Compute the power series solution of $y'' + xy' + x^2y = 0$ about $x = 0$. [5+10 = 15M]

OR

  B Using method of Frobenius obtain two linearly independent solutions about $x = 0$ for $x^2y'' + x(x-1)y' + (1-x)y = 0$. [15M]

3 A a) State Legendre's differential equation.
  b) Derive Rodrigues's formula for Legendre's differential equation. [3+12 = 15M]

OR

  B a) Define Legendre's function of the first kind.

  b) Prove that $\displaystyle\int_{-1}^{1} P_m(x)P_n(x)dx = \begin{cases} 0, & m \neq n \\ \dfrac{2}{2n+1}, & m = n \end{cases}$. [3+12 = 15M]

4 A a) Define Bessel's function of the first kind.
  b) State and prove the generating function for Bessel's function $J_n(x)$. [3+12 = 15M]

OR

  B If λ_i and λ_j are the roots of the equation $J_n(a\lambda) = 0$, then show that

  $\displaystyle\int_0^a x J_n(\lambda_i x)J_n(\lambda_j x)dx = \begin{cases} 0, & i \neq j \\ \dfrac{a^2}{2}J_{n+1}^2(\lambda_i a), & i = j \end{cases}$. [15M]

5 A a) Define Hermite polynomial of order n.

  b) Prove that $H_n(x) = (-1)^n e^{x^2} \dfrac{d^n}{dx^n} e^{-x^2}$. [3+12 = 15M]

OR

  B Prove or disprove that $\displaystyle\int_{-\infty}^{\infty} e^{-x^2} H_n(x)H_m(x)dx = 2^n n! \sqrt{\pi}\, \delta_{nm}$. [15M]

★★★★★

FACULTY OF SCIENCE
M. Sc (ZOOLOGY) I SEMESTER (CBCS) EXAMINATIONS, FEB 2025
GENETICS AND EVOLUTION
PAPER - IV

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

SECTION - A (4 X 5 = 20 Marks)

1   **Answer ALL the questions**

   a   Pleiotropism

   b   Fisher's theorem

   c   Nucleotide phylogeny

   d   Natural selection

SECTION - B (4 X 15 = 60 Marks)

Answer ALL questions

2   A   Explain about linkage, Crossing over and cytological basis of crossing over.

OR

   B   Write in detail about Genetic Mutations in Drosophila.

3   A   Give an account on Genetic equilibrium and Hardy Weinberg law.

OR

   B   Describe the various changes of gene frequency with examples.

4   A   Explain about Phylogenetic gradualism and Phylogenetic classification.

OR

   B   Describe the DNA repair mechanism and induced mutations in humans.

5   A   What is Isolation. Write a note on modes of Speciation.

OR

   B   Write the evolution of Genetic engineering and its scope.

★★★★★

FACULTY OF SOCIAL SCIENCES
M. A (ECONOMICS) I SEMESTER (CBCS) EXAMINATIONS FEB 2025
SOCIAL SECTOR
PAPER - V

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

SECTION - A (5 X 4 = 20 Marks)

1   **Answer ALL the questions**

a   Define Human Capital.

b   What is Social Costs?

c   Write a short note on Educational Planning.

d   Define Economics of Health

e   Write a note on health care.

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

2   A   "Education as Consumption and Investment goods"-Explain

OR

B   Examine the role of Human capital for promoting human development.

3   A   Discuss the Direct and Indirect Benefits of education.

OR

B   Analyze the Problems in the Measurement of Costs and Benefits.

4   A   Examine the Economics of Educational Planning in Developing Countries with special reference to India.

OR

B   What is the Role of financing in the development of education?-Discuss

5   A   "Health as Consumption and Investment goods"-Examine

OR

B   Write about the Demand and Supply of Health Care.

6   A   Explain the Resource Mobilization and Utilization of health care in India

OR

B   What are the Implications of GATS for Health Sector and financing?-Examine

★★★★★

FACULTY OF SOCIAL SCIENCES
M. A. (SOCIOLOGY) I SEMESTER (CBCS) EXAMINATIONS FEB 2025
RURAL AND URBAN SOCIOLOGY
PAPER – V (A)

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

SECTION – A (5 X 4 = 20 Marks)

1. Answer ALL the questions

   a) Explain the characteristics of traditional rural societies

   b) Does caste play a vital role in urban areas? Discuss

   c) Discuss the solutions for addressing problems in Slum areas.

   d) Write a note on Village governance.

   e) Write a note on Urban pollution.

SECTION – B (5 X 12 = 60 Marks)

Answer ALL questions

2   A) Explain the nature and scope of Urban Sociology.

OR

B) Write an essay on Green Revolution in India.

3   A) "Urbanism as a way of Life". Discuss.

OR

B) Explain Concentric Zone Theory of Urban Growth..

4   A) Does industrial growth contribute to the growth of Urban Centres? Discuss.

OR

B) Highlight the initiatives taken by government for Rural Development.

5   A) Does devastation of Artisan Profession effect Rural Economy? Discuss

OR

B) Write an essay on Panchayat Raj System.

6   A) Highlight the role of NGOs in addressing urban issues.

OR

B) Discuss the major problems in urban India.

★★★★★

FACULTY OF ARTS
M.A (TELUGU) I SEMESTER (CBCS) EXAMINATIONS, FEB 2025
తెలుగు వారి చరిత్ర సంస్కృతి - 1
పేపర్ - V

సమయం: 3 గంటలు]   [గరిష్ట మార్కులు : 80

సెక్షన్ - ఎ (5 X 4 = 20 మార్కులు)

1   ఈ క్రింది వానిపై లఘు వ్యాఖ్య వ్రాయండి

ఎ   సంస్కృతి నిర్వచనాలు

బి   పైశాచి ప్రాకృతం

సి   బృహత్ పలాయనుల కాలం

డి   బౌద్ధమతం

ఇ   పల్లవులు

సెక్షన్ – బి (5 X 12 = 60 మార్కులు)
అన్ని ప్రశ్నలకు సమాధానాలు వ్రాయండి

2   ఎ   నాగరికత స్వరూప స్వభావాలను చర్చించండి

లేదా

బి   ప్రాచీన సంస్కృతి అధ్యయన పద్ధతిని, వాటి ఆధారాలను వివరించండి

3   ఎ   శాతవాహనరాజులకు పూర్వపు ఆంధ్రదేశ స్థితిగతులను వివరించండి

లేదా

బి   శాతవాహనరాజుల కాలపు , మత సాంస్కృతిక వైవిధ్యాన్ని వివరించండి

4   ఎ   ఇక్ష్వాకుల పరిపాలనలో మత సాంస్కృతిక పరిస్థితులను వివరించండి

లేదా

బి   బృహత్ పలాయనుల పరిపాలనకాలపు సాహిత్య రీతిని విశదీకరించండి

5   ఎ   విష్ణుకుండినుల పరిపాలనలో సాహిత్యం సంస్కృతి రీతిని వివరించండి

లేదా

బి   ఆనంద గోత్రికుల పరిపాలన ,సాహిత్యవిశేషాలను వివరించండి

6   ఎ   రాష్ట్ర కూటుల పరిపాలనలో సాహిత్య సాంస్కృతిక విశేషాలను వివరించండి

లేదా

బి   పల్లవుల పరిపాలన నాటి సాహిత్య పరిస్థితులను   వివరించండి

★★★★★

FACULTY OF ARTS
M.A. (ENGLISH) I SEM (CBCS-NEW) EXAMINATIONS, FEB 2025
PHONETICS AND SPOKEN ENGLISH
PAPER - V

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

SECTION-A (5 X 4 = 20 Marks)

1   **Answer ALL the following questions**

   A   Weak forms

   B   Fricatives

   C   Syllable

   D   Complex and Compound Words

   E   General Indian English (GIE)

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

2   A   Write in detail on three term labels of Consonants?

OR

   B   Write an essay on the Organs of Speech and its functions?

3   A   Describe the English Vowels with diagrams?

OR

   B   What is manner of articulation? Describe English Consonants according to the manner of articulation?

4   A   Write in detail on Consonant Clusters with examples?

OR

   B   What are the challenges of teaching English Language in India? Explain.

5   A   What an essay on Word-Stress? Explain with suitable examples?

OR

   B   Write an essay on Intonation Patterns in English with examples?

6   A   Write an essay on varieties of Spoken English?

OR

   B   Write in detail on neutralization of Spoken English in India?

★★★★★

FACULTY OF ARTS
M. A. (ENGLISH) I SEM (CBCS-OLD) EXAMINATIONS FEB 2025
MODERN INDIAN LITERATURES IN TRANSLATION
PAPER - V

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

SECTION - A (5 X 4 = 20 Marks)

1   **Answer ALL the following questions**

A   Concept of Sahitya

B   Write a short note on the theme of Muktibodh's *A Single Shooting Star?*

C   Sketch the character of Pranesacharya?

D   Why do Devadatta and Kapila kill each other?

E   Write a short note on Premchand's *Lottery?*

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

2   A   Write an essay on Indian Dramatic Tradition?

OR

B   Elaborate on Tradition Vs Modernity?

3   A   Give an account of thematic concerns on Jibanananda Das's poems prescribed for your study?

OR

B   Write a critical appreciation of Namdeo Dhasal's *The Day She Was Gone?*

4   A   Discus the use of imagery in Ananthamurthy's *Samskara?*

OR

B   Discuss *Karukku* as a powerful portrayal of Dalit suppression? Discuss.

5   A   Tagore's Chandalika is a powerful critique of Indian Society that ignores rights and dignity of Untouchables? Discuss.

OR

B   What is the irony of the play *Silence! The Court is in Session?* Explain.

6   A   Write an essay on the main theme of Ishmat Chughtai's *Lihaaf?*

OR

B   Summarize Volga's Agony?

★★★★★

FACULTY OF ARTS

M.A. (Urdu) I - Semester Examination (CBCS)

Paper - V پانچواں پرچہ

Ghazal (غزل)

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

Answer All the questions.

(حصہ الف)

نوٹ : تمام سوالات حل کیے جائیں۔ ہر سوال کے چار (4) نشانات ہیں۔ ہر جواب پندرہ (15) سطروں میں تحریر کیا جائے۔   (5 x 4 = 20)

1۔   غزل کے لغوی معنی اور اصطلاحی مفہوم کی وضاحت کیجیے۔

2۔   سراج اورنگ آبادی کی غزل گوئی پر تبصرہ کیجیے۔

3۔   مومن کی غزل گوئی کی خصوصیات بیان کیجیے۔

4۔   اردو غزل پر کیے جانے والے اعتراضات کی وضاحت کیجیے۔

5۔   فیض کی غزل گوئی کی خصوصیات بیان کیجیے۔

(حصہ ب)

نوٹ : تمام سوالات حل کیے جائیں۔ ہر سوال کے بارہ (12) نشانات مختص ہیں۔ ہر سوال کا جواب چار (4) صفحات سے زیادہ نہ ہو۔

(5 x 12 = 60)

6۔   (A)   غزل کی ہیئت اور فن کا مفصل تجزیہ کیجیے۔   (یا)

       (B)   غزل کی سدا بہار مقبولیت کے اسباب کی وضاحت کیجیے۔

7۔   (A)   دکنی غزل کی امتیازی خصوصیات بیان کیجیے۔ (یا)

       (B)   غزل کی تاریخ میں ولی کے مقام کا تعین کیجیے۔

8۔   (A)   دبستان لکھنو کی غزل کی امتیازی خصوصیات کا تجزیہ کیجیے۔   (یا)

       (B)   اردو غزل کی تاریخ میں غالبؔ کی عظمت کے اسباب پر روشنی ڈالیے۔

9۔   (A)   اردو غزل کے احیا میں کن شاعروں نے اہم حصہ لیا تفصیل سے لکھیے۔   (یا)

       (B)   اقبال کی غزل گوئی کی انفرادیت واضح کیجیے۔

10۔   (A)   میر تقی میرؔ کے تغزل کی امتیازی خصوصیات بیان کیجیے۔ (یا)

       (B)   اصغر اور حسرت کی غزل گوئی کا تنقیدی جائزہ کیجیے۔

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FACULTY OF COMMERCE
M. COM (GENERAL, FA & CA) I SEMESTER (CBCS) EXAMINATIONS FEB 2025
BUSINESS ANALYTICS WITH SPREAD SHEETS
PAPER - V

TIME: 3 HRS]   **[MAX. MARKS: 60**

SECTION - A (5 X 3 = 15 Marks)

1) Answer all the following questions

   a) What do you understand the concept of Business Analytics?
   b) Write about date and time functions
   c) What is the procedure of Print function?
   d) What is standard deviation?
   e) Write about SYD Function.

SECTION - B (5 X 9 = 45 Marks)
Answer ALL questions

2. a) What is the concept database in business? Describe metrics and measures of data.
OR

   b) Explain in detail about features of MS-Excel.

3. a) Explain the procedure of searching data, sorting data, filtering using filters of data.

OR
   b) How to insert a picture in MS-Excel? Explain in detail about chart/Graph generation.

4. a) Explain the procedure of using colors for the better presentation in MS-Excel
OR
   b) Explain the procedure exporting and importing data from other micro soft applications.

5 a) Explain in detail about the Statistical functions
OR
   b) Explain in detail about F test two sample for variances in MS-Excel with suitable example.

6. a) Write in detail about the AMORDEGRC, AMORLINC, DB and DDB
OR
   b) What is the concept of Time value of money? Writ about ACCRINT, ACCRINTM and
      EFFECT

★★★★★

FACULTY OF COMMERCE
M.Com (GENERAL) I SEMESTER (CBCS-OLD) EXAMINATIONS FEB 2025
COMPUTER APPLICATIONS IN BUSINESS
PAPER –V

Time: 3 Hours]   **[Max. Marks : 60**

SECTION - A (5 X 2 = 10 Marks)

1. Answer any FIVE of the following in not more than *one* page each.

     a) What are functions of computer?

     b) What are different modes of transmission?

     c) What is an Operating System?

     d) Explain the features of Ms-Excel?

     e) Accounting Information System

SECTION - B (5 X 10 = 50 Marks)
Answer ALL questions

2. a) Define computer. What are the characteristics and limitation of computer?

OR

     b) What do you mean by Memory? Describe different types of Memory of computers?

3. a) What is data communication? Explain the process of data communication.

OR

     b) What is meant by network topology and what are different network topologies?

4. a) How command-line interfaces differ from graphical user interfaces?

OR

     b) List the basic steps involved in developing a multimedia product??

5. a) Create a document using word processor and examine the following:

       i. Create text
       ii. Save and Save as
       iii. print, print preview
       iv. closing

OR

     b) Describe briefly the procedure of Mail Merge? With suitable examples

6. a) Why information is important to effective managerial planning, decision-making and control?

OR

     b) What do you mean by accounting information systems?

★★★★★