



P. K. ROY MEMORIAL COLLEGE,

DHANBAD – 826004 (Estd. 1960)

NAAC ACCREDITED - B

(A Premier Post Graduate Constituent Unit of Binod Bihari Mahato Koyalanchal University, Dhanbad)

Email:- principalpkrmc@gmail.com

आवश्यक सूचना

दिनांक:-22.06.2024

स्नातक सेमेस्टर – I, III, V (Old CBCS) और VI सत्र 2021-2024 के छात्रों को सूचित किया जाता है कि आंतरिक परीक्षाएं असाइनमेंट मोड के माध्यम से आयोजित की जाएंगी। छात्रों को निर्देशित किया जाता है कि वे आंतरिक परीक्षा का प्रश्न पत्र प्राप्त करने के लिए कॉलेज की वेबसाइट (www.pkrmc.ac.in) पर जाएं और असाइनमेंट को तैयार कर संबंधित विभागों में दिनांक: 28.06.2024 तक जमा करना सुनिश्चित करें।

नोट: आंतरिक परीक्षा का जो प्रश्न पत्र कॉलेज की वेबसाइट पर उपलब्ध नहीं हैं, उनके लिए छात्र संबंधित विभागाध्यक्ष/शिक्षक से संपर्क करके प्रश्न प्राप्त कर अपने असाइनमेंट तैयार कर दिनांक: 28.06.2024 तक संबंधित विभागों में जमा करें।

K. Singh
22/06/2024
(डॉ० कविता सिंह)

प्राचार्य

8/22/06/2024

**Assignment for Semester-I, III & V
(OLD SESSIONS)
Physics (GE /General)**



**Department of Physics
P. K. Roy Memorial College
Dhanbad**

SEMESTER-I

DEPARTMENT OF PHYSICS, P. K. ROY MEMORIAL COLLEGE, DHANBAD

B.Sc. PHYSICS (GE/GENERAL) SEMESTER-I (OLD SESSIONS)

ASSIGNMENT FOR INTERNAL EXAMINATION

PHY-GE/GENERAL THEORY: MECHANICS

Full Marks: 10

Answer any TWO questions of the following

1. Define scalar triple product and vector triple product. Show that scalar triple product of vectors is equal to the volume of a parallelepiped whose sides are given by three vectors.

Or

State and prove the Kepler's laws of planetary motion

2. Discuss the general method of solving second order homogeneous differential equation with constant coefficients.
3. Deduce an expression for kinetic and potential energy for a particle executing simple harmonic motion (S.H.M.). Show that total energy in S.H.M. remains constant.
4. Using Lorentz transformation equations discuss the concept of time dilation and length contraction.

Or

Deduce the relation $Y = 3K(1 - 2\sigma)$, where Y , K and σ are Young's modulus, bulk modulus and Poisson's ratio respectively.

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DEPARTMENT OF PHYSICS, P. K. ROY MEMORIAL COLLEGE, DHANBAD

B.Sc. PHYSICS (GE/GENERAL) SEMESTER-I (OLD SESSIONS)

ASSIGNMENT FOR INTERNAL EXAMINATION

PHY-GE/GENERAL (PRACTICAL)

Full Marks: 05

Give the underlying theory, necessary diagram, procedure and relevant precautions of any one of the following experiments:

1. Measurements of length (or diameter) using vernier caliper, screw gauge and travelling microscope.
2. Determination of the Young's modulus of a wire by Optical Lever method.
3. Determination of value of acceleration due to gravity g by Bar Pendulum.
4. Determination of value of acceleration due to gravity g Kater's Pendulum.

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SEMESTER-III

DEPARTMENT OF PHYSICS, P. K. ROY MEMORIAL COLLEGE, DHANBAD

B.Sc. PHYSICS (GE/GENERAL) SEMESTER-III (OLD SESSIONS)

ASSIGNMENT FOR INTERNAL EXAMINATION

**PHY-GE/GENERAL THEORY: THERMAL PHYSICS AND STATISTICAL
MECHANICS**

Full Marks: 10

Answer any **TWO** questions of the following

1. Describe first law of thermodynamics and use it to establish a relation between C_p and C_v .
2. Describe Carnot's cycle and obtain an expression for the efficiency of an ideal heat engine working between two temperatures T_1 and T_2 .
3. Derive Planck's law of black body radiation. Use this law to establish Wien's displacement law.
4. Deduce Maxwell-Boltzmann statistical distribution law clearly explaining the underlying assumptions

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DEPARTMENT OF PHYSICS, P. K. ROY MEMORIAL COLLEGE, DHANBAD

B.Sc. PHYSICS (GE/GENERAL) SEMESTER-III (OLD SESSIONS)

ASSIGNMENT FOR INTERNAL EXAMINATION

PHY-GE/GENERAL (PRACTICAL)

Full Marks: 05

Give the underlying theory, necessary diagram, procedure and relevant precautions of any one of the following experiments:

1. Measurement of Planck's constant using black body radiation.
2. Determination of the coefficient of thermal conductivity of Cu by Searle's Apparatus.
3. Determination of the coefficient of thermal conductivity of Cu by Angstrom's Method.
4. Determination of the coefficient of thermal conductivity of a bad conductor by Lee and Charlton's disc method.

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SEMESTER-V

DEPARTMENT OF PHYSICS, P. K. ROY MEMORIAL COLLEGE, DHANBAD

B.Sc. PHYSICS (GENERAL) SEMESTER-V (OLD SESSIONS)

ASSIGNMENT FOR INTERNAL EXAMINATION

PHY-GENERAL THEORY: DIGITAL AND ANALOG CIRCUITS AND
INSTRUMENTATION

Full Marks: 10

Answer any *TWO* questions of the following

1. What are logic gates? Give the logic symbol and truth tables of OR, AND, NOT gates. Explain how AND gate is realized using diodes
2. Give the logic symbol, Boolean expression and truth table of XOR gate. Design a two input XOR gate exclusively with the help of NAND gates.
3. Discuss the current flow mechanism in a p-n junction diode when it is forward biased and when it is reverse biased.
4. What is a Bipolar Junction Transistor? Draw the circuit diagram of n-p-n transistor and explain its working.

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DEPARTMENT OF PHYSICS, P. K. ROY MEMORIAL COLLEGE, DHANBAD

B.Sc. PHYSICS (GENERAL) SEMESTER-V (OLD SESSIONS)

ASSIGNMENT FOR INTERNAL EXAMINATION

PHY-GENERAL (Practical)

Full Marks: 05

Give the underlying theory, necessary diagram, procedure and relevant precautions of any one of the following experiments:

1. To verify and design AND, OR, NOT and XOR gates using NAND gates.
2. To study Half adder and verification of its truth table.
3. To study Full adder and verification of its truth table.
4. To study V-I characteristics of P-N junction diode.

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**Assignment for Semester-I, III & V
(OLD SESSIONS) (2018-21, 2019-22)
Physics (Honours)**



**Department of Physics
P. K. Roy Memorial College
Dhanbad**

SEMESTER-I

DEPARTMENT OF PHYSICS, P. K. ROY MEMORIAL COLLEGE, DHANBAD

B.Sc. PHYSICS (H) SEMESTER-I (OLD SESSIONS) (2018-21, 2019-22)

ASSIGNMENT FOR INTERNAL EXAMINATION

PHY-H-CORE-1: MATHEMATICAL PHYSICS-I

Answer any TWO questions

Full Marks: 10

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1. Define scalar triple product. Give two characteristics of scalar triple product.
 2. State and prove Gauss's divergence theorem.
 3. Define curl of a vector field. State and prove Stoke's theorem.
 4. Define gradient of a scalar field. Find its expression in Cartesian coordinate system.

DEPARTMENT OF PHYSICS, P. K. ROY MEMORIAL COLLEGE, DHANBAD

B.Sc. PHYSICS (H) SEMESTER-I (OLD SESSIONS) (2018-21, 2019-22)

ASSIGNMENT FOR INTERNAL EXAMINATION

PHY-H-CORE-2: MECHANICS

Answer any TWO questions

Full Marks:10

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1. Define Young's modulus Y , bulk modulus K , modulus of rigidity η and Poisson's ratio σ .
 2. What are centrifugal and Coriolis forces? Calculate their values in a frame rotating with uniform angular velocity $\vec{\omega}$.
 3. What are the postulates of special theory of relativity? On the basis of these postulates obtain the Lorentz transformation equations.
 4. Using Lorentz transformation equations discuss the concept of time dilation and length contraction.

DEPARTMENT OF PHYSICS, P. K. ROY MEMORIAL COLLEGE, DHANBAD

B.Sc. PHYSICS (H) SEMESTER-I (OLD SESSIONS) (2018-21, 2019-22)

ASSIGNMENT FOR INTERNAL EXAMINATION

PRACTICAL

Full Marks: 10

Give the underlying theory, necessary diagram, procedure and relevant precautions of any one of the following experiments:

1. To determine the value of acceleration due to gravity 'g' by bar pendulum.
2. To determine the value of g using Kater's Pendulum.

SEMESTER-III

DEPARTMENT OF PHYSICS, P. K. ROY MEMORIAL COLLEGE, DHANBAD

B.Sc. PHYSICS (H) SEMESTER-III (OLD SESSIONS) (2018-21, 2019-22)

ASSIGNMENT FOR INTERNAL EXAMINATION

PHY-H-CORE-5: MATHEMATICAL PHYSICS-II AND THERMAL PHYSICS

Answer any TWO questions

Full Marks: 10

1. What is Fourier series? Determine the coefficients of the Fourier series.
2. Analyse a square wave **or** a saw tooth wave using Fourier's theorem.
3. Deduce Maxwell-Boltzmann's distribution law of velocities for ideal gas molecules.
4. Using Maxwell-Boltzmann velocity distribution formula find average speed, RMS speed and most probable speed of gas molecules.

DEPARTMENT OF PHYSICS, P. K. ROY MEMORIAL COLLEGE, DHANBAD

B.Sc. PHYSICS (H) SEMESTER-III (OLD SESSIONS) (2018-21, 2019-22)

ASSIGNMENT FOR INTERNAL EXAMINATION

PHY-H-CORE-6: PHYSICS OF THERMODYNAMICS

Answer any TWO questions

Full Marks 10

1. State the first law of thermodynamics. Give its differential form and explain its physical significance. Also prove $C_p - C_v = R$.
2. Describe Carnot's reversible heat engine and derive expression for its efficiency.
3. Obtain the expression for work done in the isothermal and adiabatic expansions of a perfect gas in terms of temperature.
4. What are thermodynamic potentials? Using thermodynamic potentials derive Maxwell's thermodynamic relations.

DEPARTMENT OF PHYSICS, P. K. ROY MEMORIAL COLLEGE, DHANBAD

B.Sc. PHYSICS (H) SEMESTER-III (OLD SESSIONS) (2018-21, 2019-22)

ASSIGNMENT FOR INTERNAL EXAMINATION

PHY-H-CORE-7: ANALOG SYSTEMS AND APPLICATIONS

Answer any TWO questions

Full Marks 10

1. What is a semiconductor? What are its characteristic properties? Discuss the formation of n-type semiconductor.
2. Obtain diode equation expressing volt-ampere (V-I) characteristics of a p-n junction diode.

3. Draw the circuit diagram of a half wave rectifier and explain its working. Calculate its ripple factor and efficiency of rectification.
4. What is a Bipolar Junction Transistor? Draw the circuit diagram of n-p-n transistor and explain its working

DEPARTMENT OF PHYSICS, P. K. ROY MEMORIAL COLLEGE, DHANBAD

B.Sc. PHYSICS (H) SEMESTER-III (OLD SESSIONS) (2018-21, 2019-22)

ASSIGNMENT FOR INTERNAL EXAMINATION

PRACTICAL

Full Marks: 10

Give the underlying theory, necessary diagram, procedure and relevant precautions of any one of the following experiments:

1. To study V-I characteristics of PN junction diode.
2. To study the V-I characteristics of a Zener diode.

SEMESTER-V

DEPARTMENT OF PHYSICS, P. K. ROY MEMORIAL COLLEGE, DHANBAD

B.Sc. PHYSICS (H) SEMESTER-V (OLD SESSIONS) (2018-21, 2019-22)

ASSIGNMENT FOR INTERNAL EXAMINATION

PHY-H-CORE-11: QUANTUM MECHANICS AND PPLICATIONS

Full Marks 10

Answer any TWO questions

1. Obtain time dependent Schrodinger wave equation.
2. Obtain time independent Schrodinger wave equation.
3. What is meant by probability and probability current density for a quantum mechanical system? Deduce the equation expressing the conservation of probability.
4. What are operators? Deduce expressions for (i) Linear momentum operator (ii) Energy operator (iii) Hamiltonian operator.

DEPARTMENT OF PHYSICS, P. K. ROY MEMORIAL COLLEGE, DHANBAD

B.Sc. PHYSICS (H) SEMESTER-V (OLD SESSIONS) (2018-21, 2019-22)

ASSIGNMENT FOR INTERNAL EXAMINATION

PHY-H-CORE-12: SOLID STATE PHYSICS

Full Marks: 10

Answer any TWO questions

1. Explain different Bravais lattices.
2. Describe Deby's theory of specific heats of solids.
3. Discuss Kronig-Penney model for the motion of an electron in a periodic potential.
4. What is Hall Effect? Obtain expression for Hall coefficient.

DEPARTMENT OF PHYSICS, P. K. ROY MEMORIAL COLLEGE, DHANBAD

B.Sc. PHYSICS (H) SEMESTER-V (OLD SESSIONS) (2018-21, 2019-22)

ASSIGNMENT FOR INTERNAL EXAMINATION

PRACTICAL CORE

Full Marks: 10

Give the underlying theory, necessary diagram, procedure and relevant precautions of any one of the following experiments:

1. To determine the Hall coefficient of a semiconductor sample.
2. To study the V-I characteristics of a Zener diode.

DEPARTMENT OF PHYSICS, P. K. ROY MEMORIAL COLLEGE, DHANBAD

B.Sc. PHYSICS (H) SEMESTER-V (OLD SESSIONS) (2018-21, 2019-22)

ASSIGNMENT FOR INTERNAL EXAMINATION

PHY-H-DSEE-1: PHYSICS OF DEVICES AND INSTRUMENTS

Full Marks:10

Answer any TWO questions

1. Describe with neat plots the V-I characteristics of a JFET . What is pinch-off voltage?
2. With the help of proper diagram explain the operation of n-channel depletion type MOSFET. Draw the output and transfer characteristic curves for n-channel depletion type MOSFET.
3. Describe the working of an astable multivibrator with suitable circuit diagram.
4. What is Amplitude Modulation (AM)? Define the term modulation index. Obtain an expression for AM wave with sinusoidal modulation.

DEPARTMENT OF PHYSICS, P. K. ROY MEMORIAL COLLEGE, DHANBAD

B.Sc. PHYSICS (H) SEMESTER-V (OLD SESSIONS) (2018-21, 2019-22)

ASSIGNMENT FOR INTERNAL EXAMINATION

PHY-H-DSE-2: ADVANCED MATHEMATICAL PHYSICS

Full Marks: 10

Answer any TWO questions

1. Define basis and dimension of a vector space. Explain inner product and norm of vectors.
2. State and prove Cauchy-Schwarz inequality theorem.
3. Show that eigen values of a Hermitian matrix are real.
4. Deduce Euler-Lagrange differential equation.

DEPARTMENT OF PHYSICS, P. K. ROY MEMORIAL COLLEGE, DHANBAD

B.Sc. PHYSICS (H) SEMESTER-V (OLD SESSIONS) (2018-21, 2019-22)

ASSIGNMENT FOR INTERNAL EXAMINATION

PRACTICAL DSE

Full Marks: 10

Give the underlying theory, necessary diagram, procedure and relevant precautions of any one of the following experiments:

1. To study the output and transfer characteristics of a JFET.
2. To study the output characteristics of a MOSFET.

**Assignment for Semester-I, III & V
(OLD SESSIONS) (2020-23, 2021-24)
Physics (Honours)**



**Department of Physics
P. K. Roy Memorial College
Dhanbad**

SEMESTER-I

DEPARTMENT OF PHYSICS, P. K. ROY MEMORIAL COLLEGE, DHANBAD

B.Sc. PHYSICS (H) SEMESTER-I (OLD SESSIONS) (2020-23, 2021-24)

ASSIGNMENT FOR INTERNAL EXAMINATION

PHY-H-CORE-1: MATHEMATICAL PHYSICS-I

Answer any TWO questions

Full Marks: 10

1. Define scalar triple product. Show that volume of a parallelepiped whose sides are represented by vectors $\vec{a}, \vec{b}, \vec{c}$ is equal to scalar triple product of these three vectors.
2. State and prove Gauss's divergence theorem.
3. Define curl of a vector field. State and prove Stoke's theorem.
4. Define gradient of a scalar field. Find its expression in Cartesian coordinate system.

DEPARTMENT OF PHYSICS, P. K. ROY MEMORIAL COLLEGE, DHANBAD

B.Sc. PHYSICS (H) SEMESTER-I (OLD SESSIONS) (2020-23, 2021-24)

ASSIGNMENT FOR INTERNAL EXAMINATION

PHY-H-CORE-2: MECHANICS

Answer any TWO questions

Full Marks:10

1. Define Young's modulus Y , bulk modulus K , modulus of rigidity η and Poisson's ratio σ .
2. What are centrifugal and Coriolis forces? Calculate their values in a frame rotating with uniform angular velocity $\vec{\omega}$.
3. State and deduce Kepler's laws of planetary motion.
4. What are the postulates of special theory of relativity? On the basis of these postulates obtain the Lorentz transformation equations.

DEPARTMENT OF PHYSICS, P. K. ROY MEMORIAL COLLEGE, DHANBAD

B.Sc. PHYSICS (H) SEMESTER-I (OLD SESSIONS) (2020-23, 2021-24)

ASSIGNMENT FOR INTERNAL EXAMINATION

PRACTICAL

Full Marks: 10

Give the underlying theory, necessary diagram, procedure and relevant precautions of any one of the following experiments:

1. To determine the value of acceleration due to gravity 'g' by bar pendulum.
2. To determine the value of g using Kater's Pendulum.

SEMESTER-III

DEPARTMENT OF PHYSICS, P. K. ROY MEMORIAL COLLEGE, DHANBAD

B.Sc. PHYSICS (H) SEMESTER-III (OLD SESSIONS) (2020-23, 2021-24)

ASSIGNMENT FOR INTERNAL EXAMINATION

PHY-H-CORE-5: MATHEMATICAL PHYSICS-II

Answer any TWO questions

Full Marks: 10

1. What is meant by Fourier series? Mention the Dirichlet conditions for existence of Fourier series. Determine the coefficients of it.
2. Solve the Legendre differential equation.
3. Solve the Legendre Bessel differential equation.
4. Define Beta and Gamma functions. Obtain relation between them.

DEPARTMENT OF PHYSICS, P. K. ROY MEMORIAL COLLEGE, DHANBAD

B.Sc. PHYSICS (H) SEMESTER-III (OLD SESSIONS) (2020-23, 2021-24)

ASSIGNMENT FOR INTERNAL EXAMINATION

PHY-H-CORE-6: THERMAL PHYSICS

Answer any TWO questions

Full Marks 10

1. Obtain Maxwell's distribution law of velocities for an ideal gaseous system.
2. State and explain zeroth law of thermodynamics and hence give the concept of temperature.
3. State and explain first law of thermodynamics. Calculate the work done during an adiabatic expansion of an ideal gas.
4. Give a brief description of Carnot's engine and find an expression for efficiency of the Carnot's cycle.

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B.Sc. PHYSICS (H) SEMESTER-III (OLD SESSIONS) (2020-23, 2021-24)

ASSIGNMENT FOR INTERNAL EXAMINATION

PHY-H-CORE-7: ANALOG SYSTEMS AND APPLICATIONS

Answer any TWO questions

Full Marks 10

1. What is a semiconductor? What are its characteristic properties? Discuss the formation of n-type semiconductor.
2. Explain what are p-type and n-type semiconductors. Discuss the mechanism for the flow of current in a p-n junction diode when it is (i) forward biased and (ii) reverse biased.

3. Draw the circuit diagram of a half wave rectifier and explain its working. Calculate its ripple factor and efficiency of rectification.
4. What is a Bipolar Junction Transistor? Draw the circuit diagram of n-p-n transistor and explain its working

DEPARTMENT OF PHYSICS, P. K. ROY MEMORIAL COLLEGE, DHANBAD

B.Sc. PHYSICS (H) SEMESTER-III (OLD SESSIONS) (2020-23, 2021-24)

ASSIGNMENT FOR INTERNAL EXAMINATION

PRACTICAL

Full Marks: 10

Give the underlying theory, necessary diagram, procedure and relevant precautions of any one of the following experiments:

1. To study V-I characteristics of PN junction diode.
2. To study the V-I characteristics of a Zener diode.

SEMESTER-V

DEPARTMENT OF PHYSICS, P. K. ROY MEMORIAL COLLEGE, DHANBAD

B.Sc. PHYSICS (H) SEMESTER-V (OLD SESSIONS) (2020-23, 2021-24)

ASSIGNMENT FOR INTERNAL EXAMINATION

PHY-H-CORE-11: QUANTUM MECHANICS AND PPLICATIONS

Full Marks 10

Answer any TWO questions

1. Obtain time dependent Schrodinger wave equation.
2. Obtain time independent Schrodinger wave equation.
3. What is meant by probability and probability current density for a quantum mechanical system? Deduce the equation expressing the conservation of probability.
4. What are operators? Deduce expressions for (i) Linear momentum operator (ii) Energy operator (iii) Hamiltonian operator.

DEPARTMENT OF PHYSICS, P. K. ROY MEMORIAL COLLEGE, DHANBAD

B.Sc. PHYSICS (H) SEMESTER-V (OLD SESSIONS) (2020-23, 2021-24)

ASSIGNMENT FOR INTERNAL EXAMINATION

PHY-H-CORE-12: SOLID STATE PHYSICS

Full Marks: 10

Answer any TWO questions

1. Explain different Bravais lattices.
2. Describe Deby's theory of specific heats of solids.
3. Discuss Kronig-Penney model for the motion of an electron in a periodic potential.
4. What is Hall Effect? Obtain expression for Hall coefficient.

DEPARTMENT OF PHYSICS, P. K. ROY MEMORIAL COLLEGE, DHANBAD

B.Sc. PHYSICS (H) SEMESTER-V (OLD SESSIONS) (2020-23, 2021-24)

ASSIGNMENT FOR INTERNAL EXAMINATION

PRACTICAL CORE

Full Marks: 10

Give the underlying theory, necessary diagram, procedure and relevant precautions of any one of the following experiments:

1. To determine the Hall coefficient of a semiconductor sample.
2. To study the V-I characteristics of a Zener diode.

DEPARTMENT OF PHYSICS, P. K. ROY MEMORIAL COLLEGE, DHANBAD

B.Sc. PHYSICS (H) SEMESTER-V (OLD SESSIONS) (2020-23, 2021-24)

ASSIGNMENT FOR INTERNAL EXAMINATION

PHY-H-DSEE-1: PHYSICS OF DEVICES AND INSTRUMENTS

Full Marks:10

Answer any TWO questions

1. Describe with neat plots the V-I characteristics of a JFET . What is pinch-off voltage?
2. With the help of proper diagram explain the operation of n-channel depletion type MOSFET. Draw the output and transfer characteristic curves for n-channel depletion type MOSFET.
3. Describe the working of an astable multivibrator with suitable circuit diagram.
4. What is Amplitude Modulation (AM)? Define the term modulation index. Obtain an expression for AM wave with sinusoidal modulation.

DEPARTMENT OF PHYSICS, P. K. ROY MEMORIAL COLLEGE, DHANBAD

B.Sc. PHYSICS (H) SEMESTER-V (OLD SESSIONS) (2020-23, 2021-24)

ASSIGNMENT FOR INTERNAL EXAMINATION

PHY-H-DSE-2: ADVANCED MATHEMATICAL PHYSICS

Full Marks: 10

Answer any TWO questions

1. Define basis and dimension of a vector space. Explain inner product and norm of vectors.
2. State and prove Cauchy-Schwarz inequality theorem.
3. Show that eigen values of a Hermitian matrix are real.
4. Deduce Euler-Lagrange differential equation.

DEPARTMENT OF PHYSICS, P. K. ROY MEMORIAL COLLEGE, DHANBAD

B.Sc. PHYSICS (H) SEMESTER-V (OLD SESSIONS) (2020-23, 2021-24)

ASSIGNMENT FOR INTERNAL EXAMINATION

PRACTICAL DSE

Full Marks: 10

Give the underlying theory, necessary diagram, procedure and relevant precautions of any one of the following experiments:

1. To study the output and transfer characteristics of a JFET.
2. To study the output characteristics of a MOSFET.

Assignment
For Internal Examination
Semester-VI (2021-24)
Physics (GENERAL)



Department of Physics
P. K. Roy Memorial College
Dhanbad

DEPARTMENT OF PHYSICS, P. K. ROY MEMORIAL COLLEGE, DHANBAD

B.Sc. PHYSICS (GENERAL) SEMESTER-VI (2021-24)

ASSIGNMENT FOR INTERNAL EXAMINATION

PHY-G-DSE-601B-T: ELEMENTS OF MODERN PHYSICS

Answer any TWO questions

Full Marks: 10 (5X2=10)

1. Explain group velocity and phase velocity. Establish a relation between them in a dispersive medium.
2. State and explain Heisenberg's uncertainty principle. Describe an experiment to illustrate the principle.
3. Obtain time dependent Schrodinger wave equation.
4. Give the relevant theory of successive disintegration of radioactive elements.

DEPARTMENT OF PHYSICS, P. K. ROY MEMORIAL COLLEGE, DHANBAD

B.Sc. PHYSICS (GENERAL) SEMESTER-VI (2021-24)

ASSIGNMENT FOR INTERNAL EXAMINATION

PRACTICAL GENERAL (PHY-G-DSE-601B-P)

Full Marks: 5

Give the underlying theory, necessary diagram, procedure and relevant precautions of any one of the following experiments:

1. To determine value of Boltzmann constant using V-I characteristic of PN diode.
2. To determine value of Planck's constant using LEDs of at least 4 different colours.

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Assignment
For Internal Examination
Semester-VI (2021-24)
Physics (Honours)



Department of Physics
P. K. Roy Memorial College
Dhanbad

DEPARTMENT OF PHYSICS, P. K. ROY MEMORIAL COLLEGE, DHANBAD

B.Sc. PHYSICS (H) SEMESTER-VI (2021-24)
ASSIGNMENT FOR INTERNAL EXAMINATION
PHY-H-C-613-T: ELECTROMAGNETIC THEORY

Answer any TWO questions

Full Marks: 10 (5X2=10)

1. Deduce the Maxwell's field equations and explain the physical significance of each of them.
2. Obtain the Poynting's theorem for the conservation of energy in an electromagnetic field. Explain the meaning of different terms involved in it.
3. Discuss the propagation of electromagnetic waves in isotropic dielectric medium. Why do these waves are regarded as transverse?
4. Deduce electromagnetic wave equation in conducting medium from Maxwell's field equations. Also define skin depth and find its expression.

DEPARTMENT OF PHYSICS, P. K. ROY MEMORIAL COLLEGE, DHANBAD

B.Sc. PHYSICS (H) SEMESTER-VI (2021-24)
ASSIGNMENT FOR INTERNAL EXAMINATION
PHY-H-C-614-T: STATISTICAL MECHANICS

Answer any TWO questions

Full Marks: 10 (5X2=10)

1. Derive the Maxwell-Boltzmann distribution: $n_i = g_i e^{-(\alpha + \beta \epsilon_i)}$ where n_i is the number of particles in energy ϵ_i and degeneracy g_i . What are the constants α and β represent?
2. Deduce Wien's displacement law and Rayleigh-Jeans law from Planck's law of black body radiation.
3. What is a partition function? Explain its significance. Express the thermodynamic quantities- entropy and Helmholtz free energy in terms of partition function.
4. What do you mean by the phase space of a particle? Draw the phase space diagram for a 1D harmonic oscillator whose energy is constrained by the condition $\epsilon < E < \epsilon + \delta\epsilon$. Also calculate the accessible phase space volume.

DEPARTMENT OF PHYSICS, P. K. ROY MEMORIAL COLLEGE, DHANBAD

B.Sc. PHYSICS (H) SEMESTER-VI (2021-24)

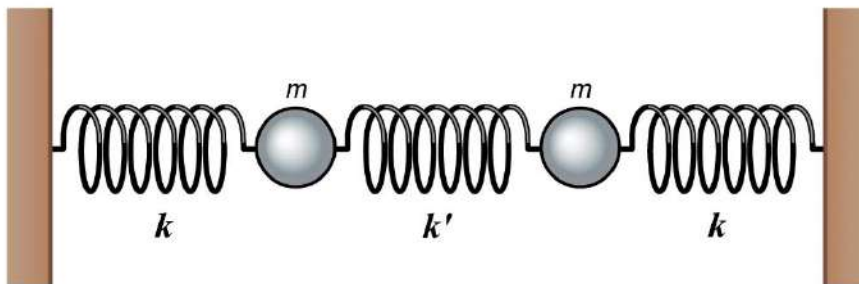
ASSIGNMENT FOR INTERNAL EXAMINATION

PHY-H-DSE-603A-T: CLASSICAL DYNAMICS

Answer any TWO questions

Full Marks: 10 (5X2=10)

1. State Hamilton's principle. Derive the Euler-Lagrange equation using Hamilton's principle.
2. Derive the equation of motion for the coupled oscillator composed of springs connected to two masses m with spring constant k and the masses are connected with another spring (spring constant k'). Solve the equation by decoupling the derived equation of motion.



3. Derive Hamilton's equation of motion for a particle in a central force field given by $V(r) = \frac{-k}{r}$, where k is constant. Shows that the angular momentum of the particle is a conserved quantity in the central force field.
4. State the postulates of the Special theory of relativity. Derive the Lorentz transformation equations with the help of these postulates.

DEPARTMENT OF PHYSICS, P. K. ROY MEMORIAL COLLEGE, DHANBAD

B.Sc. PHYSICS (H) SEMESTER-VI (2021-24)

ASSIGNMENT FOR INTERNAL EXAMINATION

PHY-H-DSE-604A-T: NUCLEAR & PARTICLE PHYSICS

Answer any TWO questions

Full Marks: 10 (5X2=10)

1. What is binding energy of the nucleus? Sketch binding energy per nucleon versus mass number curve and discuss its main features.
2. (a) State, very briefly, the significance of electric quadrupole moment of a nucleus. (b) The radius of a nucleus is 3.46 fm. Find its mass number A . (Take $R_0 = 1.2 \text{ fm}$).
3. Give an account of different conservation laws for nuclear reactions. Explain Q-value of a reaction.
4. Explain in detail the principle, construction, working and limitations of the cyclotron.

DEPARTMENT OF PHYSICS, P. K. ROY MEMORIAL COLLEGE, DHANBAD

B.Sc. PHYSICS (H) SEMESTER-VI (2021-24)

ASSIGNMENT FOR INTERNAL EXAMINATION

PRACTICAL CORE (PHY-H-C-613-P & 614-P) *Full Marks: 10*

Give the underlying theory, necessary diagram, procedure and relevant precautions of any one of the following experiments:

1. To verify the law of Malus for plane polarized light.
2. To determine the specific rotation of sugar solution using Polarimeter.
3. To analyze elliptically polarized Light by using a Babinet's compensator.
4. To determine the Boltzmann constant using V-I characteristics of PN junction diode.

DEPARTMENT OF PHYSICS, P. K. ROY MEMORIAL COLLEGE, DHANBAD

B.Sc. PHYSICS (H) SEMESTER-VI (2021-24)

ASSIGNMENT FOR INTERNAL EXAMINATION

PRACTICAL DSE (PHY-H-DSE-603A/B/C-P & 604A/B/C-P) *Full Marks: 10*

Give the underlying theory, necessary diagram, procedure and relevant precautions of any one of the following experiments:

1. To determine the wavelength of sodium source using Michelson's interferometer.
2. To determine (1) wavelength and (2) angular spread of He-Ne laser using plane diffraction grating.
3. To determine value of Planck's constant using LEDs of at least 4 different colours.

-----xxxxxx-----

Semester- 1 (old CBCS session)

Sub:-political science

#answer any two question.



Core- I(Political theory)

- 1.Explain the nature and importance of political theory.
राजनीतिक सिद्धांत की प्रकृति एवं महत्व की व्याख्या करें।
- 2.Define the elements of state
-राज्य के तत्वों को परिभाषित करें
- 3.Write the theory of origin of the state system
-राज्य व्यवस्था की उत्पत्ति के सिद्धांत को लिखें।
- 4.Discuss justice and rights.
-न्याय और अधिकार पर चर्चा करें।

Core-II(Indian Political thought)

- 1.Write the sources of Indian political thought.
-भारतीय राजनीतिक चिंतन के स्रोत को लिखें।
- 2.Write Kautilya's Saptanga Siddhanta
कौटिल्य के सप्तांग सिद्धांत को लिखें।
- 3.Write an essay on Raja Rammohan Roy.
-राजा राममोहन राय पर एक निबंध लिखे।
- 4Write a note on Mahatma Gandhi's
Gram Swaraj.
-महात्मा गांधी जी के ग्राम स्वराज पर एक टिप्पणी लिखें।

Semester 3 (old CBCS session)



sub:- Political science

Core-v (local self government of India)

answer any two question

1. Throw light on the reservation policy in Jharkhand?

- झारखंड में आरक्षण नीति पर प्रकाश डालिए।

2. Throw light on the participation of women in ruler bodies of Jharkhand?

- झारखंड के ग्रामीण निकायों में महिलाओं की भागीदारी पर प्रकाश डालें।

3. Describe the origin and development of local self government in India.

- भारत में स्थानीय स्वशासन के उद्भव एवं विकास का वर्णन करें।

4. Balwant Rai Mehta report.

- बलवंत राय मेहता रपोर्ट।

Semester- 3 (old CBCS session)



Sub:- Political science

Core-VI (competitive Government and politics)

#. Answer any two question

1. What is meant by competitive politics? Discuss its nature and scope.

- तुलनात्मक राजनीति से क्या अभिप्राय है? इसकी प्रकृति एवं क्षेत्र की विवेचना करें।

2. Discuss the features of the constitution of Britain.

- ब्रिटेन के संविधान की विशेषताओं की चर्चा करें।

3. Discuss the merit and demerit of federal form of government.

- सरकार के संघात्मक स्वरूप के लाभ हानि की चर्चा कर।

4. Power and function of French president.

- फ्रांस के राष्ट्रपति के शक्ति एवं कार्य।

Semester-3 (old CBCS session)



Sub:- Political science

Core -VII (ancient midival Western political thought)

#. Answer any two question

1. Discuss plato's idea of Philosopher king

प्लेटो के दार्शनिक राजा के विचारों का वर्णन करें

2. Discuss the main causes of revolution according the
Aristotle.

- अरस्तु के अनुसार क्रांति के प्रमुख कारणों की व्याख्या करें

3. Discuss the characteristics of of medieval political
thought.

- मध्यकालीन राजनीतिक विचारों के प्रमुख विशेषताओं का वर्णन करें।

4. Plato theory of communism wives

- प्लेटो के नारी साम्यवाद का सिद्धांत

Semester-5(old CBCS session)



Sub:- Political science

core-XI (political ideology)

#Answer any two question

1. Discuss the growth and characteristics of political ideology.
- राजनीतिक विचारधारा के विकास एवं विशेषताओं की विवेचना करें।
2. Discuss democratic socialism. What are its principles?
- लोकतांत्रिक समाजवाद क्या है? इसकी विशेषताएं बताएं
3. Write a critical essay on feminism.
- नारीवाद पर एक आलोचनात्मक निबंध लिखें।
4. Discussed Anarchism. What are its features?
- अराजकतावाद क्या है? इसकी विशेषताएं बताएं।

Semester-5(old CBCS session)



Sub:- political science

Core-XII(Indian constitutional development)

#. Answer any two question

1. Discuss the main features of Government of India act 1919.

- सन १९१९ के भारत शासन अधिनियम की प्रमुख विशेषताओं का वर्णन करें।

2. Discuss the main features of non co-operation movement.

- असहयोग आंदोलन की प्रमुख विशेषताओं का वर्णन करें।

3. Discuss the merits and demerit of quit India movement 1942.

- १९४२ के भारत छोड़ो आंदोलन की सफलता और असफलता का वर्णन कीजिए।

4. Critically examine the Nehru report

- नेहरू रिपोर्ट की आलोचनात्मक व्याख्या करें।

Semester -5(Old CBCS session)

Sub:-political science

#.Answer any two question.



DSE-1:-Group 'A'(foreign policy of India)

1.What are the principle and objectives of indian foreign policy?

-भारत के विदेशनीति के सिद्धांत एवं उद्देश्य की चर्चा करें।

2. What are the determinant of indian foreign policy?

- भारत के विदेशनीति के निर्देशक तत्वों की व्याख्या करे।

3 .discuss the role of SAARC..

- सार्क के कार्यों की व्याख्या करें।

DSE-1 :-Group'B'(international organisation)

1.Throw light on the origin and development of UNO.

-यूएनओ के उत्पत्ति एवं विकास पर प्रकाश डालें।

2.Describe the challenges facing the United Nations in the 21st century

- 21वीं सदी में संयुक्त राष्ट्र के समक्ष चुनौतियों का वर्णन करें।

3.Write an essay on UNESCO

-UNESCO पर निबंध लिखें

DSE-1 -Group'C' (democracy in India)

1.Discuss democracy in ancient India.

-प्राचीन भारत में लोकतंत्र की विवेचना करें।

2.Discuss the nature of Indian democracy.

- भारतीय लोकतंत्र की प्रकृति पर चर्चा करें।

3.Write an essay on the role of women in the political process.

राजनीतिक प्रक्रिया में महिलाओं की भूमिका पर एक निबंध लिखें।

Semester- 5 (old CBCS session)

Sub:-political science

#answer any two question



DSE-2-Group'A'(Gandhian thought)

1. Gandhiji was an anarchist philosopher discuss the statement.

- गांधी जी एक अराजकतावादी दार्शनिक थे।"इस कथन की विवेचना कीजिए।

2. Discuss Gandhiji's Economic idea.

- गांधी जी के आर्थिक विचारों का वर्णन कीजिए।

3. Write a note Mahatma Gandhi's ideas about women

-महिलाओं के संबंध में महात्मा गांधी के विचार पर टिप्पणी करें।

DSE-2:-Group'B'(state politics in India with Jharkhand)

1. Throw light on the role of ideology in Jharkhand movement.

-झारखंड आंदोलन में विचारधारा की भूमिका पर प्रकाश डालें।

2. Write a short essay on the political system of Jharkhand.

-झारखंड के राजनीतिक व्यवस्था पर एक संक्षिप्त निबंध लिखें।

3. Naxalism of Jharkhand: Comment on causes, development, impact.

झारखंड का नक्सलवाद: कारण, विकास, प्रभाव पर टिप्पणी करें।

DSE-2-GROUP'C'(political sociology)

1. Political Sociology: Describe the nature and scope.

राजनीतिक समाजशास्त्र: प्रकृति और दायरा का वर्णन करें।

2. Write a short essay on political culture.

राजनीतिक संस्कृति पर एक संक्षिप्त निबंध लिखें।

3. Explain political development and political modernization.

राजनीतिक विकास और राजनीतिक आधुनिकीकरण को समझाएं।

Semester -6(CBCS 2021-24 session)

Sub -political science

Core- XIII (Contemporary Issues of Indian Politics)

#. Answer any two question

1. what is meant by nation -building? Discuss its nature and essential implication.

- राष्ट्र -निर्माण का क्या अर्थ है? इसकी प्रकृति वह अनिवार्य निहितार्थों का विवेचन कीजिए।

2. Describe the composition and function of the election commission of India. Give some suggestion for their reform.

- भारत के चुनाव आयोग के गठन व उसके कार्यों का वर्णन कीजिए। इस संबंध में उसके सुधार हेतु कुछ सुझाव दीजिए।

3. What is meant by autonomy of state?

- राज्य की स्वायत्तता का क्या अर्थ है?

4. Write an essay on reservation.

-आरक्षण पर एक निबंध दिखें।

Core-XIV(Contemporary Political Theory)

1. Write an essay on post -Behaviourism

-उत्तर व्यवहारवाद पर एक निबंध लिखें।

2. What is the meaning of end of ideology theory?

-विचारधारा के अंत के सिद्धांत का क्या अर्थ है?

3. Discuss the development of Political theory in the 21st century.

- 21वीं शताब्दी में राजनीतिक सिद्धांत के विकास की विवेचना करें।

4. Explain the elements of ideal citizenship.

--आदर्श नागरिकता के प्रमुख तत्वों का वर्णन करें।

Semester-6(CBCS session 2021-24)

Sub -political science

#. Answer any two question

DSE-3 -Group'A'(foreign policy of major power)

1. What do you mean by foreign policy?

- विदेश नीति से आप क्या समझते हैं?

2. Define major power. What are the determinants of major power?

-महाशक्ति की परिभाषा दें। महाशक्ति के निर्धारक तत्व कौन-कौन से हैं?

3. Main characteristic of foreign policy of China

-चीन की विदेश नीति के प्रमुख विशेषताएं।

DSE-3-GROUP'B' (international law)

1. Throw light on the origin and development of international law.

-अंतर्राष्ट्रीय कानून की उत्पत्ति और विकास पर प्रकाश डालें।

2. Define the contribution of Grotius to international law.

-अंतर्राष्ट्रीय कानून में गोटियस के योगदान को परिभाषित करें।

3. Write the sources of international law.

अंतर्राष्ट्रीय कानून के स्रोतों को लिखें।

DSE-3-GROUP'C'(political party in India)

1. Political Parties: Describe the nature and types.

-राजनीतिक दल: प्रकृति और प्रकार का वर्णन करें।

2. Write a note on the nature of party system in independent India.

-स्वतंत्र भारत में दलीय व्यवस्था की प्रकृति पर टिप्पणी लिखें।

3. Write an essay on electoral process in India.

-भारत में चुनावी प्रक्रिया पर निबंध लिखें।

Semester -6(CBCS session 2021-24)

Sub -political science

#. answer any two question

DSE-4-GROUP'A'(Human right)

1. Write the principles of human right..
-मानव अधिकार के सिद्धांत को लिखें।
2. Write a short essay on Human Rights Commission.
-मानव अधिकार आयोग पर एक संक्षिप्त निबंध लिखें।
3. Explain the constitutional power and functions of the national human right commission.
- मानव अधिकार आयोग की संवैधानिक शक्ति और कार्यों की व्याख्या करें।

DSE-4-GROUP'B'(FEDERALISM IN INDIA)

1. Write the nature of federalism in India.
-भारत में संघवाद की प्रकृति को लिखें।
2. Throw light on the relationship between the Center and the States in India.
-भारत में केंद्र एवं राज्यों के संबंध पर प्रकाश डालें ।
3. Write a short essay on the demand for state autonomy.
-राज्य की स्वायत्तता की मांग पर एक संक्षिप्त निबंध लिखें।

DSE-4-GROUP'C'(COMPARATIVE POLITICAL ANALYSIS)

1. Define the terms constitution and constitutionalism.
-संविधान और संवैधानिकता शब्द को परिभाषित करें।
2. Separation of Powers: Define the principle.
-शक्ति का पृथक्करण: सिद्धांत को परिभाषित करें।
3. Comment on the downfall of the legislature.
-विधायिका के पतन पर टिप्पणी करें।

Department of Urdu

P K Roy Memorial College, Dhanbad

Sem I (Old)

- داستان کے فن پر ایک مضمون قلمبند کیجیے۔ سوال 1
- داستان 'باغ و بہار' کی لسانی خصوصیات بیان کیجئے۔ سوال 2

Sem III (Old)

- مولانا آزاد کی مضمون نگاری کا جائزہ پیش کیجئے۔ سوال 1
- انشائیہ کی تعریف کرتے ہوئے اس کے اصول اور ارتقاء سے بحث کیجئے۔ سوال 2

Sem V (Old)

- حیات طیبہ سے اپنی واقفیت کا اظہار کیجئے۔ سوال 1
- ایام جاہلیت سے کیا مراد ہے؟ تفصیل سے لکھئے۔ سوال 2

PKRM, College Dhanbad

B.A. Urdu (Hons) 2021-2024

Semester VI

Paper CC-13

- 1.Q گلستان سعدی کی حکایتوں کی اہمیت و افادیت پر روشنی ڈالیے۔
2.Q امیر خسرو کی شخصیت اور ان کی فارسی شاعری کا تفصیلی جائزہ لیجئے۔

Paper DSE CC-14

- 1.Q حضرت محمدؐ کے معصوم بچپن اور عہد شباب کا جائزہ پیش کیجئے
2.Q کفار مکہ کا ظلم و تشدد ہی ہجرت مدینہ کا سبب بنا۔ واضح کیجئے۔

Paper DSE III (B)

- 1.Q قصیدہ کے فن پر گفتگو کرتے ہوئے اس کے اجزائے ترکیبی کا جائزہ پیش کیجئے۔
2.Q اردو قصیدہ نگاری میں سودا کا کیا مقام ہے؟ واضح کیجئے۔

Paper DSE IV (B)

- 1.Q مرثیہ کے فن اور اس کے اجزائے ترکیبی پر ایک تفصیلی مضمون قلمبند کریں۔
2.Q انیس کی مرثیہ گوئی کی اہم خصوصیات کا جائزہ پیش کیجئے۔

Department of Zoology
P. K. Roy Memorial College, Dhanbad
B.Sc. Sem VI Hons. (CBCS) (2021-2024)
Internal Examination, 2024

Paper: Zoology C – 613 (Molecular Biology & Biotechnology)

F.M – 10 Marks

Answer any two questions:

5x2 = 10

- Q1. Describe the mechanism of DNA replication in prokaryotes.
- Q2. Define Operon system. Explain concept of lac operon
- Q3. Describe the mechanism of translation in prokaryotes.
- Q4. Describe the mechanism of transcription in prokaryotes.

Paper: Zoology C – 614 (Medical Zoology)

F.M – 10 Marks

Answer any two questions:

5x2 = 10

- Q1. Describe the life cycle, pathogenicity of Plasmodium vivax. Also mention its treatment.
- Q2. Describe the life cycle, pathogenicity of Taenia. Also mention its treatment.
- Q3. Describe the life cycle, pathogenicity of Leishmania donovani. Also mention its treatment.

Paper: Zoology Practical P 6

F.M – 10 Marks

Q1. Comment on:

- a. Entamoeba histolytica
- b. Mouth parts of Anopheles

Paper: Zoology DSE 603 A (Wildlife Conservation and Management)

F.M – 10 Marks

Answer any two questions:

5x2 = 10

- Q1. Describe the positive and negative values of wildlife. Also explain conservation ethics of wildlife.
- Q2. What are the major causes of depletion of wildlife (fauna & flora).
- Q3. Describe the biological parameters **OR** Physical parameters of evaluation and management of wildlife.

Paper: Zoology DSE 604 A (Agrochemical and Pest Management)

F.M – 10 Marks

Answer any two questions:

5x2 = 10

Q1. Define pest. Describe the types of pest according to damage.

Q2. What is integrated pest management. Explain biological control of pest management.

Q3. Write an essay on chemical control of pest management.

Paper: Zoology DSE Practical

F.M – 10 Marks

Answer all the following questions:

Q1. Comment on:

5x2 = 10

- a. GPS
- b. Rocker sprayer

P. K. Roy Memorial College, Dhanbad
Department of Zoology
B.Sc. SEM I (OLD) (CBCS)
Internal Examination, 2024

Paper: Zoology C- 101(Systematic & Animal Diversity: Non-Chordate)
Answer any three questions.

F.M = 15 Marks

- Q1. Define canal system. Describe various types of canal system in Porifera. 05
- Q2. Give a detailed account of the structure & life history of Obelia. 05
- Q3. Discuss various types of locomotor organelles of Protozoa. Explain briefly how they bring about locomotion. 05
- Q4. Explain the Polymorphism in Siphonophora. 05
- Q5. Describe the various types of larval forms in Crustacean. 05

Paper: Zoology C- 102 (Principle of Ecology)

F. M = 15 Marks

Answer any three questions:

- Q1. What is an Ecosystem? Write about the components of ecosystem. 05
- Q2. Give a detail account on energy flow of ecosystem. 05
- Q3. Define bio-geochemical cycle. Describe carbon cycle. 05
- Q4. Define ecological pyramid. Describe different types of ecological pyramids. 05
- Q5. Explain food chain & food web. 05

Paper: P- 1 (Practical)

F.M= 10

Comments on the following:

Q1. Spotting:

2x5=10

- a) Sycon
- b) Hydra
- c) Fasciola hepatica
- d) Ascaris
- e) Hermit Crab

P. K. Roy Memorial College, Dhanbad
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B.Sc. SEM I GE (OLD) (CBCS)
Internal Examination, 2024

Paper: Zoology GE Theory
Answer any three questions.

F.M = 15 Marks
5x3 = 15

- Q1. Describe the pathogenicity and treatment of disease caused by *Entamoeba histolytica*.
Q2. Write an essay on Canal system of sycon.
Q3. Describe the structure and life cycle of obelia. Also define metagenesis.
Q4. Describe the life cycle of *Ascaris*. Also explain its pathogenicity.
Q5. Write an essay on flight adaptation in birds.
Q6. Write a detail account on accessory respiratory organs.

Paper: Zoology GE Practical

F.M = 05 Marks

Q1. Spotting:

2.5x2= 05

- a. Obelia colony
- b. Sycon

P. K. Roy Memorial College, Dhanbad
Department of Zoology
B.Sc. SEM III (OLD) (CBCS)
Internal Examination, 2024

Paper: Zoology C- 305 (Biochemistry)

F.M = 15 Marks

Answer any three questions.

5x3 = 15

- Q1. Describe the structure and conformation of primary, secondary, tertiary and quaternary proteins with suitable diagrams.
- Q2. What do you mean by carbohydrate? Give a brief account on monosaccharides, disaccharides and polysaccharides.
- Q3. Explain the general properties and classification of enzymes.
- Q4. Explain the mechanism of enzymes action and factors affecting enzymes activity.
- Q5. Describe Glycolysis or Krebs's Cycle with suitable flow diagram.

Paper: Zoology C- 306 (Mammalian Physiology)

F.M = 15 Marks

Answer any three questions.

5x3 = 15

- Q1. Describe the mechanism of digestion & absorption of carbohydrate **OR** protein along with the GIT.
- Q2. Describe the concept of BMR (Basal Metabolic Rate).
- Q3. Discuss the Composition of blood and its functions.
- Q4. Write a detailed account on transport of oxygen and also explain oxygen dissociation curve.
- Q5. Define saltatory conduction. Explain its mechanism.

Paper: Zoology C- 307 (Endocrinology)

F.M = 15 Marks

Answer any three questions.

5x3 = 15

- Q1. Describe the structure and functions of Adenohypophysis.
- Q2. Describe the structure and function of Thyroid gland.
- Q3. Describe the mechanism of action and function of Vasopressin or ADH.
- Q4. Discuss about the disorders related to hormonal abnormalities of thyroid gland.
- Q5. Short notes on any two:
- Diabetes Insipidus vs. Diabetes Mellitus
 - Posterior Pituitary
 - Gigantism vs. Acromegaly

Paper – P 3 practical

F.M = 15 Marks

All questions are compulsory:

3x5=15 Marks

- Q1. Prepare Haemin crystal of given blood sample. (05)
- Q2. Estimate Blood pressure using sphygmomanometer (05)
- Q3. Comment on: (2.5x2=05)
- T.S of Stomach
 - T.S of Thyroid gland

P. K. Roy Memorial College, Dhanbad
Department of Zoology
B.Sc. SEM III GE (OLD) (CBCS)
Internal Examination, 2024

Paper: Zoology GE Theory

Answer any three questions.

F.M = 15 Marks

5x3 = 15

- Q1. Describe the structure and classification of Proteins OR Carbohydrates
- Q2. Describe the structure and function of Adrenal gland.
- Q3. Describe the structure and function of Thyroid gland.
- Q4. Describe Glycolysis OR Krebs's Cycle with suitable flow diagram.
- Q5. Write a detailed account on transport of oxygen and also explain oxygen dissociation curve.

Paper: Zoology GE Practical

F.M = 05 Marks

Q1. Comment on:

2.5x2 = 05

- a) T.S of Adrenal gland
- b) 24 Hrs of Chick Embryology.

P. K. Roy Memorial College, Dhanbad
Department of Zoology
B.Sc. SEM V (OLD) (CBCS)
Internal Examination, 2024

Paper: Zoology C 511 (Immunology)

Answer any three questions.

F.M = 15 Marks
5x3 = 15

- Q1. What is immunity? Describe innate immunity and its types & function.
Q2. Describe different types of immunocompetent cells and accessory cells. Also mention its function.
Q3. Define antibody. Describe the different types of Immunoglobulins and its functions.
Q4. Explain the different types of primary lymphoid organs and their significance.
Q5. What is MHC? Explain HLA system in human.

Paper: Zoology C 512 (Developmental Biology)

Answer any three questions.

F.M = 15 Marks
5x3 = 15

- Q1. Give a detail account on pre-fertilisation events.
Q2. What is cleavage? Describe its types on the basis of cleavage pattern with suitable example.
Q3. Define fate map. Explain fate map in blastula in amphioxus.
Q4. Describe the structure, types and function of placenta.
Q5. Short notes on any two:
a) Oogenesis
b) Amphimixis
c) Determinate & Indeterminate cleavage.
d) Role of yolk in cleavage.

Paper: Zoology Practical (511 & 512)

Answer any three questions.

F.M = 10 Marks

Q1. Spotting

- a) 24 hrs of chick embryology
b) 36 hrs of chick embryology
c) L.S of Early blastula of frog
d) V.S of Complete gastrula

Paper DSE 501 A (Economic Zoology)

Answer any three questions.

F.M = 15 Marks
5x3 = 15

- Q1. Give a detail account on the varieties of honey bee in India.
Q2. Write short notes on the apiary management and rearing equipment.
Q3. Write about the disease of honey bee. Also discuss its management.
Q4. Give a detail account on the types of silk and silkworms in India

Paper: DSE – 502 A (Biostatistics)

F.M= 15 Marks

Answer any three questions.

5x3 = 15

Q1. Define data. Explain primary & secondary data with suitable examples.

Q2. What is diagrammatic representation of data? Explain histogram with suitable example.

Q3. Marks obtained in test examination by Bioscience students of K. K. College.

Zoology	Botany	Microbiology
85	75	80

Draw a pie chart of the given marks obtained by the students.

Q4. What is mean? Describe its advantages & disadvantages.

Paper: DSE – Practical

F.M= 10 (2.5 x 4)

Q1. Comment on the following

- a) Queen & Worker bee
- b) Honey bee comb
- c) Life cycle of honey bee
- d) Silk Cocoon

P K Roy Memorial College, Dhanbad
Department of Biotechnology
Semester I (Old) Internal Examination, 2024

Paper: C-1 Biochemistry and Metabolism F.M.= 15

Answer any **three** questions and each questions carries five marks each:-

1. Write a short notes on Structure of protein.
2. Describe the structure of DNA.
3. Illustrate the step of beta oxidation of fatty acid
4. Write a short note on properties of enzymes.

Paper: C-2 Cell Biology F.M.= 15

Answer any **three** questions and each questions carries five marks each:-

1. Illustrate the salient features of ultra structure of Bacteria.
2. Write a short notes on Passive and Active transport.
3. Describe the Ultra structure of Chloroplast.
4. Illustrate events found in cell division – mitosis in sequence.

Paper: Practical Core Practical F.M.= 10

Answer any **two** questions and each questions carries five marks each:-

1. Illustrate the step of gram staining.
2. Write the protocol of qualitative nature of Glucose
3. write the protocol of qualitative nature of Protein.

P K Roy Memorial College, Dhanbad
Department of Biotechnology
Semester III (Old) Internal Examination, 2024

Paper: C-5

Genetics

F.M.= 15

Answer any **three** questions and each questions carries five marks each:-

1. Explain Law of Dominance with example.
2. Write a short notes on Linkage.
3. Illustrate the types of structural chromosomal abbreviation.
4. Write a short notes on Nucleosome structure.

Paper: C-6

General Microbiology

F.M.= 15

Answer any **three** questions and each questions carries five marks each:-

1. Write a short notes on Synchronous batch culture.
2. Describe the economic uses of Virus.
3. Describe the uses of fermented foods.
4. Describe about the Bacterial reproduction.

Paper: C-7

Chemistry-I

F.M.= 15

Answer any **three** questions and each questions carries five marks each:-

1. Write a short notes on Electromagnetic waves.
2. Describe the Ionic radii.
3. Describe the Carbocation.
4. Describe application of van der walls equation.

Paper: Prac-3

Core practical

F.M.= 15

Answer any **three** questions and each questions carries five marks each:-

1. Write the protocol of barr body Rhoeo translocation
2. Write the protocol of gram staining.
3. Write the protocol to prepare Ethyl Benzoate.
4. Comment on Chi Square with example.

P K Roy Memorial College, Dhanbad
Department of Biotechnology
Semester V (Old) Internal Examination, 2024

Paper: C-11 Industrial Fermentation F.M.= 15

Answer any **three** questions and each questions carries five marks each:-

1. Describe about the Fed batch culture.
2. Describe about the static Bioreactor.
3. Describe the process of inoculation.
4. Describe the industrial production of Acetic acid.

Paper: C-12 Recombinant DNA Technology F.M.= 15

Answer any **three** questions and each questions carries five marks each:-

1. Describe the equipment used in DNA fingerprinting.
2. Write a short notes on pBR322.
3. Describe about the transgenic animals.
4. Describe the structure of Ti-Plasmid.

Paper: Prac-5 Core practical F.M.= 10

Answer any **two** questions and each questions carries five marks each:-

1. Comment on structure of continuous fermenter with diagram.
2. Comment on PCR with diagram.
3. Illustrate the protocol of culture media preparation.

P K Roy Memorial College, Dhanbad

Department of Biotechnology

Semester V (Old) Internal Examination, 2024

Paper: DSE- 1 Plant Biotechnology F.M.= 15

Answer any **three** questions and each questions carries five marks each:-

1. Describe the equipment used in Tissue culture.
2. Write a short notes on Anther culture.
3. Describe about the Somatic hybridization.
4. Describe the structure of Ti-Plasmid.

Paper: DSE-2 Environmental Biotechnology F.M.= 15

Answer any **three** questions and each questions carries five marks each:-

1. Describe the management strategies for soil degradation.
2. Describe the Bioremediation of water.
3. Describe about the Non- Conventional fuels.
4. Describe about the vermiculture.

Paper: DSE- Prac DSE Practical F.M.= 10

Answer any **two** questions and each questions carries five marks each:-

1. Write the protocol of MS medium preparation.
2. Write the protocol of sterilize and preparation of an explant for tissue culture.
3. Comment on VAM with diagram.

P K Roy Memorial College, Dhanbad
Department of Biotechnology
Semester VI Internal Examination, 2024

Paper: C-13 Microbial & Plant Physiology F.M.= 15

Answer any **three** questions and each questions carries five marks each:-

1. Describe about the methanogens.
2. Describe about the Vernalization.
3. Describe the process of Calvin Cycle.
4. Describe the non cyclic Photophosphorylation.

Paper: C-14 Biostatistics and Bioinformatics F.M.= 15

Answer any **three** questions and each questions carries five marks each:-

1. Describe about the ANOVA.
2. Write a short notes on collection of data.
3. Describe about the PASTA.
4. Describe about the SWISSPROT.

Paper: Prac Core practical F.M.= 10

Answer any **two** questions and each questions carries five marks each:-

1. Comment on pie chart with diagram.
2. Comment on BLAST with diagram.
3. Illustrate the protocol of Inverted funnel experiment.

P K Roy Memorial College, Dhanbad

Department of Biotechnology

Semester VI Internal Examination, 2024

Paper: DSE- 3 Animal Biotechnology F.M.= 15

Answer any **three** questions and each questions carries five marks each:-

1. Describe the techniques used in Gene transfer methods in Animals.
2. Write a short notes on transgenic animals.
3. Describe about the monoclonal antibodies.
4. Describe about the stem cell technology.

Paper: DSE-2 Dissertation F.M.= 15

Paper: DSE- Prac DSE Practical F.M.= 05

Answer any **one** questions and each questions carries five marks each:-

1. Write the protocol of minimal essential growth medium preparation.
2. Write the protocol of DNA isolation from animal tissue.

P K Roy Memorial College, Dhanbad

Department of Botany

Semester I (Old) Internal Examination, 2024

Paper: C-1 Microbiology & Phycology F.M.= 15

Answer any **three** questions and each questions carries five marks each:-

1. Illustrate the salient features of ultra structure of Bacteria.
2. Describe the economic importance of Virus
3. Describe the structure of *Chara* Sex Organ with diagram.
4. write a short note on life cycle of *Batrachospermum*.

Paper: C-2 Biomolecules & Cell Biology F.M.= 15

Answer any **three** questions and each questions carries five marks each:-

1. Write a short notes on Structure of protein.
2. Describe the structure of DNA.
3. Describe the Ultra structure of Chloroplast.
4. Illustrate events found in cell division – mitosis in sequence.

Paper: Practical Core Practical F.M.= 10

Answer any **two** questions and each questions carries five marks each:-

1. Illustrate the step of gram staining.
2. Write the protocol of qualitative nature of Glucose
3. write the protocol of qualitative nature of Protein.

P K Roy Memorial College, Dhanbad
Department of Botany
Semester III (Old) Internal Examination, 2024

Paper: C-5 Anatomy of Angiosperms F.M.= 15

Answer any **three** questions and each questions carries five marks each:-

1. Describe the types of Meristematic tissues.
2. Describe the types of vascular bundles
3. Write a short notes on anatomical adaptation of hydrophytes.
4. Differentiate between Heart wood and Sap wood.

Paper: C-6 Economic Botany F.M.= 15

Answer any **three** questions and each questions carries five marks each:-

1. Write a short notes on five medical plants.
2. Describe the economic uses of Wheat.
3. Describe the economic uses of coconuts.
4. Describe the economic uses of sugarcane.

Paper: C-7 Genetics F.M.= 15

Answer any **three** questions and each questions carries five marks each:-

1. Explain Law of Dominance with example.
2. Write a short notes on Linkage.
3. Illustrate the types of structural chromosomal abbreviation.
4. Illustrate the types of mutation.

Paper: Prac-3 Core practical F.M.= 15

Answer any **three** questions and each questions carries five marks each:-

1. Comment on anomalous structure of *Dracaena* with diagram.
2. Comment on structure of Xylem with diagram.
3. Comment on structure of *Nerium* leaf with diagram.
4. Comment on Chi Square with example.

P K Roy Memorial College, Dhanbad
Department of Botany
Semester V (Old) Internal Examination, 2024

Paper: C-11 Embryology of Angiosperms F.M.= 15

Answer any **three** questions and each questions carries five marks each:-

1. Describe the structure of anther wall with diagram.
2. Describe the structure of Ovule with diagram.
3. Describe the process of Double fertilization.
4. Describe the types of Endosperm.

Paper: C-12 Plant Biotechnology F.M.= 15

Answer any **three** questions and each questions carries five marks each:-

1. Describe the equipment used in Tissue culture.
2. Write a short notes on Anther culture.
3. Describe about the Somatic hybridization.
4. Describe the structure of Ti-Plasmid.

Paper: Prac-5 Core practical F.M.= 10

Answer any **two** questions and each questions carries five marks each:-

1. Comment on structure of Heart shaped Dicot Embryo with diagram.
2. Comment on structure of mature embryo sac with diagram.
3. Illustrate the protocol of culture media preparation.

P K Roy Memorial College, Dhanbad

Department of Botany

Semester V (Old) Internal Examination, 2024

Paper: DSE-1 Plant breeding F.M.= 15

Answer any **three** questions and each questions carries five marks each:-

1. Write a short notes on types of Selection
2. Write a short notes on Hybridization.
3. Illustrate the types of Polyploidy.
4. Illustrate the role of mutation in crop improvement.

Paper: DSE-2 Natural Resource Management F.M.= 15

Answer any **three** questions and each questions carries five marks each:-

1. Describe the management strategies for soil degradation.
2. Describe the biological resource threats.
3. Describe about the Non- renewable energy.
4. Describe the National efforts in resource management.

Paper: DSE- Prac DSE Practical F.M.= 10

Answer any **two** questions and each questions carries five marks each:-

1. Write the protocol of Emasculation techniques.
2. Write the protocol of Bagging techniques.
3. Comment on Cyanobacteria- *Nostoc* with diagram.

P K Roy Memorial College, Dhanbad
Department of Botany
Semester VI Internal Examination, 2024

Paper: C-13

Plant Physiology

F.M.= 15

Answer any **three** questions and each questions carries five marks each:-

1. Describe about the Root pressure theory.
2. Describe about the seed dormancy.
3. Describe the factors affecting transpiration.
4. Describe the types of Plant growth regulators.

Paper: C-14

Plant Metabolism

F.M.= 15

Answer any **three** questions and each questions carries five marks each:-

1. Describe the process of Photophosphorylation.
2. Write a short notes on nitrogen fixation.
3. Describe the steps involved in glycolysis.
4. Describe the steps involved in TCA cycle.

Paper: Prac

Core practical

F.M.= 10

Answer any **two** questions and each questions carries five marks each:-

1. Illustrate the protocol of inverted funnel experiment.
2. Illustrate the protocol of separation of pigments by chromatography.
3. Illustrate the protocol of Ganong's Potometer to determine the rate of transpiration.

P K Roy Memorial College, Dhanbad

Department of Botany

Semester VI Internal Examination, 2024

Paper: DSE-3 Environment and waste management F.M.= 15

Answer any **three** questions and each questions carries five marks each:-

1. Write a short notes on classification of waste.
2. Write a short notes on industrialization.
3. Illustrate the need of management of waste .
4. Write a short notes on Swacch Bharat Abhiyaan.

Paper: DSE-4 Industrial Microbiology F.M.= 15

Answer any **three** questions and each questions carries five marks each:-

1. Describe about the Eutrophication.
2. Describe about the Mycorrhizae.
3. Describe about the production of Antibiotics.
4. Describe the structure of Biogas construction.

Paper: DSE- Prac DSE Practical F.M.= 10

Answer any **two** questions and each questions carries five marks each:-

1. Write the protocol of quadrat method of plant community frequency.
2. Write the protocol of study microbial flora of water sample.
3. Comment on mycorrhiza with diagram.

(10 marks)

Sem - V
CHE - H - DSE - 501 - A - T

1 hr

Answer any two question —

- (1) Explain the basic principle of instrumentation.
- (2) Write the basic principle of instrumentation of IR.
- (3) Explain the theory of thermogravimetry (TG).

(10 marks)

Sem - V
CHE - H - DSE - 502 - A - T

1 hr

- (1) Explain the theory of FTIR.
- (2) Explain Gas chromatography.
- (3) Explain principles, Instrumentation of NMR Spectroscopy.

Full marks - 10 Sem - 01

Time - 1hr

Answer any two questions.

(10)

- (1) a) Explain Bohr's theory & its limitations.
b) Pauli exclusion principle. (3+2)
- (2). Explain effective nuclear charge. Shielding or screening effect. (5)
- (3) Draw the M.O Diagram of O_2 . Calculate ~~Bond~~ its bond order & magnetic behaviour. (5)

Sem - 001 paper - (102)

Answer any two questions!

- (1) a) Explain postulates of KTG.
b) Define mean free path. (3+2)
- (2) (a) Explain buffer solution.
(b) Explain solubility and solubility product. (3+2)
- (3) Explain Bravais lattice and Bragg's equation. (5)

Fullmarks - 10 Sem - III (Inorganic Chem) Time 1hr

Answer any two questions.

(1) a) Explain Bronsted-Lowry concept of acid-base reaction.

b) Classification of Lewis acid. (3+2)

(2) Write prepⁿ, properties and shape of XeF_2 , XeF_4 and XeF_6 (5)

(3) Explain types of inorganic polymer. (5)

(10 marks) — Sem III — 306-T — Organic Chemistry (1hr)

Answer any two questions.

(1) Write preparation and properties of alkyl halides. (5)

(2) Explain the following reactions:

(a) Perkin reaction

(b) Cannizzaro reaction

(c) Wittig reaction. (5)

(3) Explain the preparation and properties of mono carboxylic acid. (5)

Sem - III - 307 → Physical Chemistry
answer any two questions.

- (1) (a) Explain the concept of fugacity.
(b) Explain Clausius-Clapeyron equation.
- (2) (a) Define order and molecularity of the reaction.
(b) Explain opposing and parallel reaction.
- (3) Explain adsorption isotherm and nature of adsorbed state.

(10 marks) Sem - V - CHE - H-C-511-T
(1hr)

Answer any two questions -

- (1) Write structure, synthesis and reaction of Guanine. (5)
- (2) Write structure, synthesis of α -amino acid. (5)
- (3) Write mechanism of enzyme reaction. (5).

(10 marks) Sem - V CHE - H-C-512-T

Answer any two questions -

- (1) Write postulates of quantum mechanics.
- (2) Explain zero point energy and Schrodinger wave equation.
- (3) (a) Write selection rule.
(b) P, Q, R-branches explain.

Sem 6 Gen

Auditing

Q1. What is auditing? Explain its objective.

Q2. What are corporate social responsibilities? Explain.

Management accounting

Q1. What do you mean by management accounting? How does it differ from financial accounting?

Q2. Give the specimen of cash flow statement.

Fundamental of investment

Q1. What is the investment environment? Explain the factor that affects it.

Q2. Explain the role of SEBI in investor protection.

Entrepreneurship

Q1. What do you mean by entrepreneurship? discussing its characteristics.

Q2. Write notes on micro small and medium enterprises.

Sem I [honours and general]

Financial accounting -I

Q1. What is the hire purchase system? Difference between hire purchase system and installment payment system.

Q2. What is Goodwill? Discuss the method of calculation of goodwill.

Business law

Q1. What is a contract? Discuss the essential element of a valid contract.

Q2. What is a bailment contract? Differentiate between bailment and pledge.

Applied money and banking

Q1. What is money? Discuss the main function of money.

Q2. Write the function of reserve Bank of India.

Sem - III

Business statics

Q1. What is primary data? Discuss the method of collecting primary data.

Q2. What is the centred tendency? Explain the advantages and disadvantages of mean median and mode.

Direct tax

Q1. What is direct tax? How does it differ from indirect tax?

Q2. What do you understand by residence? How residential status determine?

Human resource management

Q1. What do you mean by human resource management? write their importance.

Q2. Write the functions of human resource management.

Business economics

Q1. What is the law of demand? Why demand curve sloped down from left to right?

Q2. What is perfect competition? How to price determination under perfect competition?

Sem -V

Cost accounting

Q1. What is cost accounting? How does it differ from financial accounting?

Q2. Give the specimen top cost sheet.

Financial market institution and Financial service

Q1. Explain the function of the security exchange board of India.

Q2. Right notes on mutual funds.

Principle of marketing

Q1. What is market segmentation? What is its importance?

Q2. Right notes on SWOT analysis.

Rural marketing.

Q1. What is rural marketing? Discuss its functions.

Q2. Distinguish between rural marketing and urban marketing.

Sem -V (Gen)

Cost accounting

Q1. What is cost accounting? How does it differ from financial accounting?

Q2. Give the specimen top cost sheet.

Financial market institution and Financial service

Q1. Explain the function of the security exchange board of India.

Q2. Right notes on mutual funds.

Human resource management

Q1. What do you mean by human resource management? Right their importance.

Q2. Write the functions of human resource management.

Computer application and information technology

Q1. What is Microsoft word? discuss its importance.

Q2. Define database management system? What is the use of a database management system?

DSE-3(C): INDIAN BANKING & FINANCIAL SYSTEM

- Q1. State the evolution of Indian banking system.
- Q2. Functions of central bank.
- Q3. Instruments of money control.

DSE-4(A): INTRODUCTORY ECONOMETRICS

- Q1. Methodology of econometrics
- Q2. Difference b/w economic & econometric model
- Q3. Explain the role of random term in econometric model.

DSE-4(B): DEMOGRAPHY

- Q1. meaning & scope of demography.
- Q2. components of population growth.
- Q3. meaning of fertility? factors affecting fertility rate?

DSE-4(C): JHARKHAND ECONOMY

- Q1. State the basic features of Jharkhand economy.
- Q2. Major industries of Jharkhand.
- Q3. Status of poverty in Jharkhand

SEM-6

CORE 13: PUBLIC FINANCE

- Q1. Explain the meaning & scope of public finance.
- Q2. Differentiate b/w public & private finance.
- Q3. What do you mean by tax? Explain its types.

CORE 14: HUMAN DEVELOPMENT DIMENSIONS & INDIA

- Q1. What does Human development mean? What are its indicators?
- Q2. What are the components of Human development?
- Q3. What are the social & economic causes of poor health & education of women in India?

DSE 3 (A): ADVANCED MATHEMATICAL ECONOMICS

Q1. What is set? Explain its types?

Q2. Differentiate: i) $\frac{x^3 + 3x^2 - x}{x^2}$

ii) $y = \log(x^2 + 1)(x^2 - 1)$

iii) $y = \sqrt{ax + b}$

DSE-3(B): LEADING ISSUES IN INDIAN AGRICULTURE

- Q1. Explain the composition of Indian rural economy.
- Q2. What are the technological advancements in Agriculture?
- Q3. Pattern of agricultural development.

DSE-1 : PRINCIPLES OF AGRICULTURAL ECONOMICS

- Q. what is the role of agriculture in economic development?
- Q. explain the nature & scope of agriculture.

DSE-1 : MONEY & FINANCIAL MARKETS

- Q. explain the concept of foreign exchange.
- Q. state the functions of money.

DSE-2 : ADVANCED STATISTICS FOR ECONOMICS

- Q. difference between quantitative & qualitative data.
- Q. define descriptive statistics.

DSE 2 : INDUSTRIAL & LABOUR ECONOMICS

- Q. explain the meaning & subject matter of industrial economics.
- Q. what is the importance of study of industrial economics?
- Q. what does industrial productivity means?

DSE 2 : ECONOMICS OF SOCIAL SECTOR

- Q. difference between human & physical capital
- Q. what role education plays as an instrument of economic growth?
- Q. what is the importance of health in economic development?

SEM-5

CORE - 11 : ECONOMICS OF GROWTH & DEVELOPMENT

- Q. state the difference between economic growth & development.
- Q. what are the indicators of economic growth?
- Q. define poverty & explain its types.

CORE - 12 - PLANNING, DEVELOPMENT, & PROBLEMS OF INDIAN ECONOMY

- Q. what are the trends & growth pattern of Indian economy?
- Q. difference between planning commission & NITI Aayog.
- Q. define unemployment & explain its types.

DSE - 1 - MATRIX & OR

- Q. what operational research means? state its different phases.
- Q. How many types of Matrices are there?
- Q. find the cofactor & adjoint of $\begin{bmatrix} 2 & 1 & -3 \\ 5 & -1 & 9 \\ -6 & 2 & 5 \end{bmatrix}$

ENGLISH DSE - III
GROUP - A

F.M. - 15

Answer any two questions: 7.5x2

Q1:- Consider Ruskin Bond as a story writer.

Q2:- Summarize the main ideas contained in "The Room of Many Colours".

Q3:- Discuss Walden as a re-discovery of Nature.

ENGLISH DSE - IV
GROUP - A

F.M. - 15
(7.5x2)

Answer any two questions:

Q1:- Discuss the main ideas contained in "The Hungry Tide".

Q2:- Critically appreciate the poem "The young captive".

Q3:- Summarize the main ideas of the poem "Commander Fishers".



UG SEM - VI

Internal Examination
2024

ENGLISH CORE - 13

Answer any two questions: 7.5×2

Q1:- Consider *Thosts* as a problem play.

Q2:- Discuss the message of "The Good Woman of Setzuan".

Q3:- Write a critical note on Modern European Drama.

ENGLISH CORE - 14

Answer any two questions: 7.5×2

Q1:- Justify the title of the novel "The White Tiger".

Q2:- Discuss the plot of the novel "Things Fall Apart".

Q3:- Write a critical note on post-colonial Sensibility.

PKRM College Dhanbad
Geology Internal Examination
B.SC. (Sem-1 Old) NEP-2020 FYUGP

(Full Marks-20)

Q-1: Briefly describe the Internal structure of Earth with neat sketches? (10-marks)

Q-2: Briefly describe the concept of plate tectonics with neat sketches? (10-marks)

PKRM College Dhanbad
Geology Internal Examination
B.SC. (Sem-3 Old) NEP-2020 FYUGP

(Full Marks-20)

Q-1: Describe the texture of igneous rocks? (10-marks)

Q-2: Briefly explain the different structure of igneous rocks? (10-marks)

**PKRM College Dhanbad
Geology Internal Examination
B.SC. (Sem-5, Core-11, Old) CBCS**

(Full Marks-15)

Q-1: Briefly explain the landforms formed by fluvial processes. (10-marks)

Q-2: Describe the different endogenic & exogenic processes of geomorphology. (05-marks)

**PKRM College Dhanbad
Geology Internal Examination
B.SC. (Sem-5, Core-12, Old) CBCS**

(Full Marks-15)

Q-1: Briefly explain the aquifer & its types. (10-marks)

Q-2: Describe the hydrological cycle. (05-marks)

**PKRM College Dhanbad
Geology Internal Examination
B.SC. (Sem-5, DSE-01, Old) CBCS**

(Full Marks-15)

Q-1: Briefly explain the proximate analysis of coal. (10-marks)

Q-2: Write a note on Maceral & lithotypes in Coal. (05-marks)

**PKRM College Dhanbad
Geology Internal Examination
B.SC. (Sem-5, DSE-02, Old) CBCS**

(Full Marks-15)

Q-1: Explain the different magmatic processes of ore mineralisation. (10-marks)

Q-2: Write a note on Skarn deposit. (05-marks)

**PKRM College Dhanbad
Geology Internal Examination
B.SC. (Sem-6, Core-13) CBCS**

(Full Marks-15)

- Q-1: Briefly explain the types of Dam & its geological considerations. (10-marks)
Q-2: Write a note on Rock Quality Designation (RQD). (05-marks)

**PKRM College Dhanbad
Geology Internal Examination
B.SC. (Sem-6, Core-14) CBCS**

(Full Marks-15)

- Q-1: Explain the types of aerial photography and its application on various landforms. (10-marks)
Q-2: Describe the application of remote sensing in mineral exploration. (05-marks)

**PKRM College Dhanbad
Geology Internal Examination
B.SC. (Sem-6, Core-13 & 14 Practical) CBCS**

(Full Marks-10)

- Q-1: Write down the engineering properties of Granite. (05-marks)
Q-2: Describe the different seismic zones on political map of India. (05-marks)

**PKRM College Dhanbad
Geology Internal Examination
B.SC. (Sem-6, DSE-03) CBCS**

(Full Marks-15)

- Q-1: Briefly explain different stages of Mineral Exploration. (10-marks)
Q-2: Write a note on geochemical exploration. (05-marks)

**PKRM College Dhanbad
Geology Internal Examination
B.SC. (Sem-6, DSE-04) CBCS**

(Full Marks-15)

- Q-1: Explain the sources of air pollution & its effects of air pollution on atmosphere. (10-marks)
Q-2: Write a note on structure & composition of atmosphere. (05-marks)

**PKRM College Dhanbad
Geology Internal Examination
B.SC. (Sem-6, DSE-03 & 04 Practical) CBCS**

(Full Marks-10)

- Q-1: Write a note on metallogenic provinces of India (05-marks)
Q-2: Describe the flood prone areas on political map of India. (05-marks)

HISTORY

SEM - 01

OLD (CBCS)

CORE- 01

20MARKS

Answer all Questions (सभी प्रश्नों के उत्तर दें)

Q1. प्राचीन भारतीय इतिहास के लिखित स्रोतों की चर्चा करें।

Discuss the written Sources of Ancient Indian History.

Q2. वैदिक युग के राजनीतिक एवं धार्मिक जीवन पर प्रकाश डालें ।

Throw light on the political and religious life of Vedic age.

SEM-01

OLD (CBCS)

GEN & G.E. HISTORY

20MARKS

Answer all Questions (सभी प्रश्नों के उत्तर दें)

Q1. चन्द्रगुप्त मौर्य की उपलब्धियों की चर्चा करें।

Discuss the achievements of Chandragupta Maurya.

Q2. समुद्रगुप्त की उपलब्धियों पर प्रकाश डालें।

Throw light on the achievements of Samudragupta.

SEM-03 **OLD (CBCS)** **CORE-05** **20MARKS**

Answer all Questions (सभी प्रश्नों के उत्तर दें)

Q1. अलाउद्दीन खिलजी के आर्थिक सुधारों पर प्रकाश डालें।

Throw light on the economic reforms of Allauddin Khilji.

Q2. सूफी आंदोलन पर एक निबंध लिखें।

Write an essay on Sufi Movement.

SEM-03 **CORE-06** **20MARKS**

Answer all Questions (सभी प्रश्नों के उत्तर दें)

Q1. पोपुलिस्ट आंदोलन की चर्चा करें।

Discuss Populist Movement.

Q2. अमेरिकी क्रांति के कारणों पर प्रकाश डालें।

Throw light on the causes of American Revolution.

SEM-03 **CORE-07** **20 MARKS**

Answer all Questions (सभी प्रश्नों के उत्तर दें)

Q1. ताना भगत आंदोलन की चर्चा करें।

Discuss Tana Bhagat Movement.

Q2. 'संथाल हूल' पर प्रकाश डालें।

Throw light on 'Santhal Hul'.

SEM-03 **GE & GEN** **20 MARKS**

Answer all Questions (सभी प्रश्नों के उत्तर दें)

Q1. शेरशाह की प्रशासनिक व्यवस्था पर प्रकाश डालें।

Throw light on the administrative system of SherShah.

Q2. मनसबदारी व्यवस्था की चर्चा करें।

Discuss Mansabdari System.

SEM-05 **OLD (CBCS)** **CORE-11** **20 MARKS**

Answer all Questions (सभी प्रश्नों के उत्तर दें)

Q1. जे० पी० आंदोलन पर एक निबंध लिखें।

Write an essay on J. P. Movement.

Q2. पंचवर्षीय योजनाओं के अंतर्गत कृषि एवं उद्योग के विकास के लिए किए गए कार्य पर प्रकाश डालें।

Throw light on the efforts made on the development of Agriculture and Industry under five-year plans.

SEM-05

CORE-12

20 MARKS

Answer all Questions (सभी प्रश्नों के उत्तर दें)

Q1. टाइपिंग विद्रोह की चर्चा करें।

Discuss Taiping Rebellion.

Q2. डा० सन-यात-सेन के कार्यों पर प्रकाश डालें।

Throw light on the works of Dr.Sun-Yat-Sen.

SEM-05

DSE-01

20 MARKS

Answer all Questions (सभी प्रश्नों के उत्तर दें)

Q1. भारत में लार्ड कार्नवालिस के कार्यों पर प्रकाश डालें।

Throw light on the works of Lord Cornwallis in India.

Q2. ब्रह्मसमाज एवं आर्य समाज पर एक निबंध लिखें।

Write an essay on Arya Samaj and Brahmo Samaj.

SEM-05

DSE-02

20 MARKS

Answer all Questions (सभी प्रश्नों के उत्तर दें)

Q1. बंगाल विभाजन एवं स्वदेशी आंदोलन पर प्रकाश डालें।

Throw light on partition of Bengal and Swadeshi Movement.

Q2. असहयोग आंदोलन एवं सविनय अवज्ञा आंदोलन की चर्चा करें।

Discuss Non Co-operation Movement and Civil Disobedience Movement.

SEM-06

CORE-13

20 MARKS

Answer any Two Questions (किन्हीं दो प्रश्नों के उत्तर दें।)

Q1. Discuss the reforms of Lord Lytton.

लार्ड लिटन के अधीन सुधार की व्याख्या करें।

Q2. Write an essay on the policy adopted by Lord Curzon in India.

भारत में लॉर्ड कर्जन की नीतियों पर एक निबंध लिखें।

Q3. Throw light on the features of Government of India Act, 1935.

भारत सरकार अधिनियम, 1935 के विशेषताओं पर प्रकाश डालें।

SEM-06

CORE-14

20 MARKS

Answer any Two Questions (किन्हीं दो प्रश्नों के उत्तर दें।)

Q1. Throw light on the reforms of Reza Shah Pahlavi.

रजाशाह पहलवी के सुधारों पर प्रकाश डालें।

Q2. Throw light on the French Mandate in Lebanon.

लेबनान में फ्रांसीसी संरक्षण पर प्रकाश डालें।

Q3. Describe the reforms introduced by Mustafa Kamal Pasha.

मुस्तफा कमाल पाशा के सुधारों का वर्णन करें।

SEM-06

DSE-03

Session: 2021-24

20 MARKS

Answer any Two Questions (किन्हीं दो प्रश्नों के उत्तर दें।)

Q1. Examine the relevance of Non-Alignment Movement.

गुट-निरपेक्ष आंदोलन की प्रासंगिकता का मूल्यांकन करें।

Q2. Give an account of Indo-China war of 1962.

1962 के भारत-चीन युद्ध का विवरण दें।

Q3. Give an account of the Indo-Pakistan wars. What was the reason behind these wars?

भारत-पाकिस्तान युद्धों का विवरण दें। इन युद्धों के क्या कारण थे?

SEM-06

DSE-04

Session: 2021-24

20 MARKS

Answer any Two Questions (किन्हीं दो प्रश्नों के उत्तर दें।)

Q1. Describe the main work and contribution of U.N.O.

संयुक्त राष्ट्र संघ के मुख्य कार्य तथा योगदान का वर्णन करें।

Q2. Explain the role of Iraq in Gulf War.

खाड़ी युद्ध में इराक की भूमिका का वर्णन करें।

Q3. Describe the role and impact of the U.N.O. on the Apartheid Policy of South Africa.

दक्षिण अफ्रीका के रंगभेद नीति पर संयुक्त राष्ट्र संघ की भूमिका और उसके प्रभाव का वर्णन करें।

SEM-06

GENERAL

20 MARKS

Q1. Discuss the causes of the rise of Nationalism in India.

भारत में राष्ट्रवाद के अभ्युदय के कारणों की चर्चा करें।

Q2. Discuss Non-Cooperation Movement conducted by Mahatma Gandhi.

महात्मा गांधी के द्वारा चलाए गए असहयोग आंदोलन की चर्चा करें।

SEM VI – HIN-C 613

जनसंचार

किन्हीं दो प्रश्नों के उत्तर दें-

- (क) जनसंचार की परिभाषा देते हुए उसके स्वरूप पर प्रकाश डालें।
- (ख) इलेक्ट्रॉनिक मीडिया पर प्रकाश डालिए।
- (ग) कम्प्यूटर के उद्भव और विकास पर प्रकाश डालें।

SEM VI – HIN-C 614

पत्रकारिता

किन्हीं दो प्रश्नों के उत्तर दें।

- 1- पत्रकारिता की परिभाषा देते हुए इसकी विशेषताओं पर प्रकाश डालिए।
- 2- स्वतंत्रता पूर्व हिंदी पत्रकारिता के उद्भव एवं विकास पर प्रकाश डालिए।
- 3- पत्रकारिता के क्षेत्र में आचार्य महावीर प्रसाद द्विवेदी के योगदान का उल्लेख करें।

SEM VI – DSE 3

राष्ट्रभाषा हिंदी

किन्हीं दो प्रश्नों के उत्तर दें।

- 1- कबीर का साहित्यिक परिचय दीजिए।
- 2- विरह कौ अंग के आधार पर कबीर की विरह भावना पर प्रकाश डालिए।
- 3- माया कौ अंग के आधार पर कबीर के माया संबंधी विचार स्पष्ट करें।

SEM VI – DSE 4

राष्ट्रभाषा हिंदी

किन्हीं दो प्रश्नों के उत्तर दें।

- 1- राष्ट्रभाषा के रूप में हिंदी के महत्व पर प्रकाश डालें।
- 2- राजभाषा और राष्ट्रभाषा में अंतर स्पष्ट करें।
- 3- देवनागरी लिपि के उद्भव और विकास पर प्रकाश डालें।

PM-22 HINDI

Paper Name- 01-CC-1-0101

स्थापक

Ques. 1. कु - पुहलवाक्य र्थनाम के कितने भेद हैं

ख - गरौर का सन्धि विभेद करे ?

ग - कमल का दो पर्यायवाची रूप लिखे ?

घ - डिगु समास का एक उदाहरण लिखे ?

डो - सम्प्रेषण के कितने प्रकार हैं

च - वाचन कला का सबसे बड़ा भाष्यक क्या है

छ - कुलसूत्र के ल्यमाका का नाम बताइए

ज - कुलसूत्र के कुल कितने वर्ग हैं

झ - कुलसूत्र का कुल नामक कौन है ,

ञ - क्रिया के मुख्य रूप के कितने भेद हैं

Ques 2. - सन्धिभंग समास के उदाहरण लिख करे

उ. रामचारी सिंह दिनकर का साहित्यिक परिचय दे

स्थापक

ख. 4 - साक्षात्का लैना भी एक कला है स्पष्ट करे ।

5. समाचावाचन से क्या समझते हैं

6. विशेषण किसे कहते हैं

7. कुलसूत्र के प्रथम वर्ग का उदाहरण लिखे

8. कुलसूत्र के उद्देश्य या प्रकाश डाले ?

9. सम्प्रेषण की उदाहरण करके दुरु -

SEM I – HIN-C 101

हिन्दी साहित्य का इतिहास

किंहीं दो प्रश्नों के उत्तर दें-

- (क) आदिकाल की राजनीतिक एवं सामाजिक परिस्थितियों पर प्रकाश डालिए।
- (ख) आदिकाल के नामकरण पर प्रकाश डालिए।
- (ग) आदिकाल की प्रवृत्तियों पर प्रकाश डालिए।

SEM I – HIN-C 102

भक्तिकाल: इतिहास एवं साहित्य

किंहीं दो प्रश्नों के उत्तर दें-

- (क) भक्तिकालीन राजनीतिक एवं सामाजिक परिस्थितियों पर प्रकाश डालिए।
- (ख) संतकाव्य की प्रवृत्तियों को उद्घाटित करें।
- (ग) भक्तिकाल की प्रवृत्तियों को उद्घाटित करें।

SEM I – GE

किंहीं दो प्रश्नों के उत्तर दें-

- (क) राष्ट्रभाषा के रूप में हिंदी की वर्तमान स्थिति पर अपने विचार प्रस्तुत करें।
- (ख) पूर्वी हिन्दी की बोलियों पर प्रकाश डालिए।
- (ग) देवनागरी लिपि के गुण-दोष पर प्रकाश डालिए।

SEM III – HIN-C 305

आधुनिक काल एवं साहित्य

किंहीं दो प्रश्नों के उत्तर दें-

- (क) छायावाद की प्रमुख प्रवृत्तियों पर प्रकाश डालिए।
- (ख) आधुनिक काल की परिस्थितियों को स्पष्ट करें।
- (ग) 'पुष्प' की अभिलाषा कविता की समीक्षा करें।

SEM III – HIN-C 306

आधुनिक काल एवं साहित्य

किंहीं दो प्रश्नों के उत्तर दें-

- (क) प्रगतिवाद की प्रमुख प्रवृत्तियों पर प्रकाश डालिए।
- (ख) नई कविता की प्रमुख प्रवृत्तियों को सोदाहरण स्पष्ट करें।
- (ग) 'नदी के दीप' कविता की समीक्षा करें।

SEM III – HIN-C 307

भाषाविज्ञान

किंहीं दो प्रश्नों के उत्तर दें-

- (क) भाषा की प्रमुख प्रवृत्तियों पर प्रकाश डालिए।
- (ख) ध्वनि परिवर्तन के कारणों को सोदाहरण स्पष्ट करें।
- (ग) अर्थ परिवर्तन के कारणों को सोदाहरण स्पष्ट करें।

पंचम समसत्र (हिंदी निबंध)

- निम्नलिखित में से किन्हीं दो प्रश्नों का उत्तर अपने शब्दों में दीजिए

1. हिंदी निबंध के उद्भव एवं विकास पर प्रकाश डालिए।
2. आचार्य रामचंद्र शुक्ल की निबंध शैली पर प्रकाश डालिए।
3. ललित निबंधकार के रूप में आचार्य हजारी प्रसाद द्विवेदी का मूल्यांकन कीजिए।
4. 'सच्ची वीरता' अथवा 'उत्साह' शीर्षक निबंध का मूल भाव अपने शब्दों में लिखिए।

हिंदी आलोचना

- निम्नलिखित प्रश्नों में से किन्हीं दो का उत्तर अपने शब्दों में दीजिए।

1. हिंदी आलोचना की परिभाषा देते हुए उसके स्वरूप एवं महत्व पर प्रकाश डालिए।
2. रामचंद्र शुक्ल की आलोचनात्मक दृष्टि पर प्रकाश डालिए।
3. यथार्थवाद , मार्क्सवाद और मनोविश्लेषणवाद से आप क्या समझते हैं - स्पष्ट कीजिए।
4. नंद दुलारे बाजपेयी 'अथवा' डॉक्टर नगेंद्र की समीक्षात्मक दृष्टि पर प्रकाश डालिए।

उपन्यास (DSE-1)

- निम्नलिखित में से किन्हीं दो प्रश्नों का उत्तर अपने शब्दों में दीजिए।

1. उपन्यासकार के रूप में प्रेमचंद का मूल्यांकन कीजिए।
2. 'आपका बंटी' शीर्षक उपन्यास का सारांश अपने शब्दों में लिखिए।
3. 'परती परिकथा' उपन्यास के मूल कथ्य पर प्रकाश डालिए।
4. 'कर्मभूमि' उपन्यास के उद्देश्य पर प्रकाश डालें।

हिंदी नाटक (DSE-2)

- निम्नलिखित प्रश्नों में से किन्हीं दो का उत्तर अपने शब्दों में दीजिए।

1. 'स्कंदगुप्त' नाटक में अभिव्यक्त राष्ट्रीय चेतना पर प्रकाश डालिए।
2. 'कोणार्क' शीर्षक नाटक का सारांश अपने शब्दों में लिखिए ।
3. 'आषाढ़ एक दिन' नाटक के आधार पर 'कालिदास' अथवा 'मल्लिका' का चरित्र चित्रण कीजिए।
4. नाटककार के रूप में जगदीश चंद्र माथुर का मूल्यांकन कीजिए।

HISTORY

SEM - 01

OLD (CBCS)

CORE- 01

20MARKS

Answer all Questions (सभी प्रश्नों के उत्तर दें)

Q1. प्राचीन भारतीय इतिहास के लिखित स्रोतों की चर्चा करें।

Discuss the written Sources of Ancient Indian History.

Q2. वैदिक युग के राजनीतिक एवं धार्मिक जीवन पर प्रकाश डालें ।

Throw light on the political and religious life of Vedic age.

SEM-01

OLD (CBCS)

GEN & G.E. HISTORY

20MARKS

Answer all Questions (सभी प्रश्नों के उत्तर दें)

Q1. चन्द्रगुप्त मौर्य की उपलब्धियों की चर्चा करें।

Discuss the achievements of Chandragupta Maurya.

Q2. समुद्रगुप्त की उपलब्धियों पर प्रकाश डालें।

Throw light on the achievements of Samudragupta.

SEM-03 **OLD (CBCS)** **CORE-05** **20MARKS**

Answer all Questions (सभी प्रश्नों के उत्तर दें)

Q1. अलाउद्दीन खिलजी के आर्थिक सुधारों पर प्रकाश डालें।

Throw light on the economic reforms of Allauddin Khilji.

Q2. सूफी आंदोलन पर एक निबंध लिखें।

Write an essay on Sufi Movement.

SEM-03 **CORE-06** **20MARKS**

Answer all Questions (सभी प्रश्नों के उत्तर दें)

Q1. पोपुलिस्ट आंदोलन की चर्चा करें।

Discuss Populist Movement.

Q2. अमेरिकी क्रांति के कारणों पर प्रकाश डालें।

Throw light on the causes of American Revolution.

SEM-03 **CORE-07** **20 MARKS**

Answer all Questions (सभी प्रश्नों के उत्तर दें)

Q1. ताना भगत आंदोलन की चर्चा करें।

Discuss Tana Bhagat Movement.

Q2. 'संथाल हूल' पर प्रकाश डालें।

Throw light on 'Santhal Hul'.

SEM-03 **GE & GEN** **20 MARKS**

Answer all Questions (सभी प्रश्नों के उत्तर दें)

Q1. शेरशाह की प्रशासनिक व्यवस्था पर प्रकाश डालें।

Throw light on the administrative system of SherShah.

Q2. मनसबदारी व्यवस्था की चर्चा करें।

Discuss Mansabdari System.

SEM-05 **OLD (CBCS)** **CORE-11** **20 MARKS**

Answer all Questions (सभी प्रश्नों के उत्तर दें)

Q1. जे० पी० आंदोलन पर एक निबंध लिखें।

Write an essay on J. P. Movement.

Q2. पंचवर्षीय योजनाओं के अंतर्गत कृषि एवं उद्योग के विकास के लिए किए गए कार्य पर प्रकाश डालें।

Throw light on the efforts made on the development of Agriculture and Industry under five-year plans.

SEM-05

CORE-12

20 MARKS

Answer all Questions (सभी प्रश्नों के उत्तर दें)

Q1. टाइपिंग विद्रोह की चर्चा करें।

Discuss Taiping Rebellion.

Q2. डा० सन-यात-सेन के कार्यों पर प्रकाश डालें।

Throw light on the works of Dr.Sun-Yat-Sen.

SEM-05

DSE-01

20 MARKS

Answer all Questions (सभी प्रश्नों के उत्तर दें)

Q1. भारत में लार्ड कार्नवालिस के कार्यों पर प्रकाश डालें।

Throw light on the works of Lord Cornwallis in India.

Q2. ब्रह्मसमाज एवं आर्य समाज पर एक निबंध लिखें।

Write an essay on Arya Samaj and Brahmo Samaj.

SEM-05

DSE-02

20 MARKS

Answer all Questions (सभी प्रश्नों के उत्तर दें)

Q1. बंगाल विभाजन एवं स्वदेशी आंदोलन पर प्रकाश डालें।

Throw light on partition of Bengal and Swadeshi Movement.

Q2. असहयोग आंदोलन एवं सविनय अवज्ञा आंदोलन की चर्चा करें।

Discuss Non Co-operation Movement and Civil Disobedience Movement.

SEM-06

CORE-13

20 MARKS

Answer any Two Questions (किन्हीं दो प्रश्नों के उत्तर दें।)

Q1. Discuss the reforms of Lord Lytton.

लार्ड लिटन के अधीन सुधार की व्याख्या करें।

Q2. Write an essay on the policy adopted by Lord Curzon in India.

भारत में लॉर्ड कर्जन की नीतियों पर एक निबंध लिखें।

Q3. Throw light on the features of Government of India Act, 1935.

भारत सरकार अधिनियम, 1935 के विशेषताओं पर प्रकाश डालें।

SEM-06

CORE-14

20 MARKS

Answer any Two Questions (किन्हीं दो प्रश्नों के उत्तर दें।)

Q1. Throw light on the reforms of Reza Shah Pahlavi.

रजाशाह पहलवी के सुधारों पर प्रकाश डालें।

Q2. Throw light on the French Mandate in Lebanon.

लेबनान में फ्रांसीसी संरक्षण पर प्रकाश डालें।

Q3. Describe the reforms introduced by Mustafa Kamal Pasha.

मुस्तफा कमाल पाशा के सुधारों का वर्णन करें।

SEM-06

DSE-03

Session: 2021-24

20 MARKS

Answer any Two Questions (किन्हीं दो प्रश्नों के उत्तर दें।)

Q1. Examine the relevance of Non-Alignment Movement.

गुट-निरपेक्ष आंदोलन की प्रासंगिकता का मूल्यांकन करें।

Q2. Give an account of Indo-China war of 1962.

1962 के भारत-चीन युद्ध का विवरण दें।

Q3. Give an account of the Indo-Pakistan wars. What was the reason behind these wars?

भारत-पाकिस्तान युद्धों का विवरण दें। इन युद्धों के क्या कारण थे?

SEM-06

DSE-04

Session: 2021-24

20 MARKS

Answer any Two Questions (किन्हीं दो प्रश्नों के उत्तर दें।)

Q1. Describe the main work and contribution of U.N.O.

संयुक्त राष्ट्र संघ के मुख्य कार्य तथा योगदान का वर्णन करें।

Q2. Explain the role of Iraq in Gulf War.

खाड़ी युद्ध में इराक की भूमिका का वर्णन करें।

Q3. Describe the role and impact of the U.N.O. on the Apartheid Policy of South Africa.

दक्षिण अफ्रीका के रंगभेद नीति पर संयुक्त राष्ट्र संघ की भूमिका और उसके प्रभाव का वर्णन करें।

SEM-06

GENERAL

20 MARKS

Q1. Discuss the causes of the rise of Nationalism in India.

भारत में राष्ट्रवाद के अभ्युदय के कारणों की चर्चा करें।

Q2. Discuss Non-Cooperation Movement conducted by Mahatma Gandhi.

महात्मा गांधी के द्वारा चलाए गए असहयोग आंदोलन की चर्चा करें।

Case I Sem I Answer Any three questions

- (i) State and prove Leibnitz theorem
- (ii) Find the asymptotes of the curve
 $x^3 - 2y^3 + 2xy^2 - xy^2 + 2y - y^2 + 3 = 0$
- (iii) Trace the curve $ay^2 = x^2(a^2 - x^2)$
- (iv) The necessary and sufficient condition for vector function v of scalar variable t to have constant direction is that $v \times \frac{dv}{dt} = 0$
- (v) Find the tangential and normal components of accelerations.

Case II Answer Any three questions

- (i) State and prove De Moivre's theorem for rational index
- (ii) If $A + iB = \log \cos \theta + i \sin \theta$, find A and B
- (iii) State and prove fundamental theorem of arithmetic
- (iv) State and prove Cantor's theorem
- (v) Prove that every subset of a countable set is countable.

Case I Sem I Answer Any three questions

- (i) State and prove Leibnitz theorem
- (ii) Find the asymptotes of the curve $x^3 - 2y^3 + 2xy^2 - xy^2 + 2y - y^2 + 3 = 0$
- (iii) Trace the curve $ay^2 = x^2(a^2 - y^2)$
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(i) State and prove De Moivre's theorem for rational index

(ii) If $A + iB = \log \cot \theta$, find A and B

(iii) State and prove fundamental theorem of arithmetic

(iv) State and prove Cantor's theorem

(v) Prove that every subset of a countable set is countable.

Sem III Case V

Answer any three questions

(i)

State and prove Intermediate Value Theorem

(ii)

State and prove Darboux's Theorem on derivatives

(iii)

State and prove Taylor's Theorem with Lagrange's form of remainder

(iv)

State and prove Cauchy's mean value theorem

(v)

State and prove Rolle's Theorem

Case VI

Answer Any three questions

(i)

Prove that identity element of a group G is unique.

(ii)

Let H_1 and H_2 be two subgroups of a group G , then $H_1 \cap H_2$ is a subgroup but $H_1 \cup H_2$ is not a subgroup of G .

(iii)

State and prove Lagrange's Theorem

(iv)

Prove that intersection of two normal subgroups of a group is a normal subgroup.

(v)

State and prove Cauchy's Theorem on finite abelian group.

Case VIII

Answer Any three questions

- (i) Solve $(x^2 - y^2)p + (y^2 - 2xy)q = z^2 - xy$
- (ii) Use Charpit's method to solve the equation
 $pxy + pq + qy - yz = 0$
- (iii) Solve the following Charpit's method
 $px + qy = pz$
- (iv) Find the general solution of $(y + 2y - 3)(y^2 + y)z = 0$
- (v) Solve $xyz - 4s + t = 16 \log(x + 2y)$.

Qns for Internal

Philosophy

NEP - Sem I (Major I) / Sem I - Minor ^{philosophy} ~~AMEA~~

1. भारतीय दर्शन की मुख्य विशेषताओं का वर्णन करें।
2. भारतीय दर्शन के आस्तिक एवं नास्तिक सम्प्रदाय का वर्णन करें।

NEP - Sem III (Major - IV)

1. इकार्टे के अनुसार संदेहविधि की व्याख्या करें।
2. स्पिनोजा के अनुसार मन-शरीर संबंध की व्याख्या करें।

NEP - Sem III Phil - Major V

1. जॉन सिडवॉल्ट के रूप में बुद्धिवाद की व्याख्या करें।
2. कान्ट के समीक्षावाद की व्याख्या करें।

NEP - Sem III, Phil - Minor (Mm 1-B)

1. वैदिक दर्शन के अनुसार तहत है आप क्या समझते हैं?
2. जीता के अनुसार निष्काम कर्म की व्याख्या करें।

Internal Exam - Sem V (CBCS)

Philosophy - Core 11

1. परंपरा एवं आधुनिकता की व्याख्या करें ।
2. मौलाना की व्याख्या करें ।

Philosophy Core-12

1. कर्म के सिद्धांत की व्याख्या करें ।
2. चार युगधर्मों की व्याख्या करें ।

Philosophy - DSE - 1

1. बौद्ध दर्शन के चार आर्मधर्मों की व्याख्या करें ।
2. बौद्ध धर्म में बलिष्ठ प्रतीकसमुदाय की व्याख्या करें ।

Philosophy - DSE - 2 / Philosophy - General

1. ईश्वर के अस्तित्व के लिए प्रयोजनमूलक नक की व्याख्या करें ।
2. धर्म निरपेक्षवाद की व्याख्या करें ।

Internal Exam - Sem - VI (CBCS)

Philosophy - Course - 13

1. ब्रैडले के अनुसार आभास एवं सत्य की व्याख्या करें।
2. पर्स के व्यवहारवादी सिद्धान्त की व्याख्या करें।

Philosophy - Course - 14

1. पुरुषवादी समाज के विरुद्ध नारीवाद की व्याख्या करें।
2. अरस्तू के अनुसार प्रकृति एवं मनुष्य के बीच संबंध की व्याख्या करें।

Philosophy - DSE - 3

1. सांख्य दर्शन के अनुसार पुरुष-प्रकृति संबंध की व्याख्या करें।
2. भारतीय दर्शन में विभिन्न प्रमाणों की व्याख्या करें।

Philosophy - DSE - 4 / Philosophy - General

1. पर्यावरण से आप क्या समझते हैं? व्याख्या करें।
2. जनसंख्या की समस्या पर अपने विचार लिखें।