



DELHI PUBLIC SCHOOL GAYA

(Under the aegis of the Delhi Public School Society, New Delhi)
Affiliated to C.B.S.E, New Delhi Affiliation No.330530, School Code – 65572

DURGA PUJA HOLIDAY ASSIGNMENT CLASS-XII (ACADEMIC SESSION: 2025-26)

Are you looking for some interesting fun learning assignment to make your learning session interesting and engaging? Here in this assignment, you will find some very interesting and engaging tasks that will be fun solving.

ENGLISH CORE (301)

General Instructions

- Originality is key – plagiarism will lead to disqualification.
- Use A4 sheets only, write neatly, and mention Name, Class and Section on each page.
- Mention word count at the end of each piece.
- Create a PORTFOLIO with:
- Cover page titled “PORTFOLIO”
- A self-introduction page (short creative write-up about yourself)
- All work filed neatly and creatively.

Evaluation Criteria: Originality, imagination, clarity, language, and presentation.

Textbook: Flamingo

- Prose: Indigo
- Poem: A Roadside Stand

Tasks

1. Prose Task – Reflective Essay (300–350 words)
 - Title: “The Courage to Stand Alone”
 - Linked to Indigo: Write about a real or imagined incident where someone took a stand against injustice. Show how courage, no matter how small, can inspire change.
2. Poetry Task (12–14 lines)
 - Theme: “The Forgotten Voices”
 - Linked to A Roadside Stand: Write a poem giving voice to marginalized or neglected people (farmers, street vendors, workers, or the poor), expressing their hopes and struggles.

MATHEMATICS (041)

1. Let $A = \{1, 2, 3\}$ and $B = \{1, 2, 4\}$ then $f = \{(1, 1), (1, 2), (2, 1), (3, 4)\}$, is a
 - (a) one-one function from A to B
 - (b) bijection from A to B
 - (c) surjection from A to B
 - (d) none of the above
2. Write the value of $\tan^{-1}\left(\tan \frac{3\pi}{4}\right)$.
3. Solve that $\sin^{-1}\left(\frac{8}{17}\right) + \sin^{-1}\left(\frac{3}{15}\right) = \tan^{-1}\left(\frac{77}{36}\right)$

4. If the matrix $A = \begin{vmatrix} 0 & a & -3 \\ 2 & 0 & -1 \\ b & 1 & 0 \end{vmatrix}$ is skew-symmetric, find the values of a and b .
5. A total amount ₹ 7000 is deposited in three different saving bank accounts with annual interest rates of 5%, 8% and 8 % respectively. The total annual interest from these three accounts Rs. 550. Equal amounts have been deposited in the 5% and 8% savings accounts. Find the amount deposited in each of the three accounts, with the help of matrices.
6. Differentiate $\tan^{-1}\left(\frac{\cos x + \sin x}{\cos x - \sin x}\right)$ with respect to x .
7. If $y = a \sin x + b \cos x$, then prove that $y^2 + \left(\frac{dy}{dx}\right)^2 = a^2 + b^2$
8. An open tank with a square base and vertical sides is to be constructed from a metal sheet so as to hold a given quantity of water. Show that the cost of material will be least when depth of the tank is half of its width. If the cost is to be borne by nearby settled lower income families, for whom water will be provided.
9. A window is of the form of a semi-circle with a rectangular on its diameter. The total perimeter of the window is 10 m. Find the dimensions of the window at admit maximum light through the whole opening.
10. AB is the diameter of a circle and C is any point of the circle. Show that the area of $TABC$ is maximum, when it is an isosceles triangle.

BIOLOGY (044)

Biotechnology: Principal and Processes

- Restriction Endonuclease Hind II always cuts DNA molecules at a particular point by recognising a specific sequence of:
 - Six base pairs
 - Four base pairs
 - Seven base pairs
 - Three base pairs
- The improved trait that is found in the genetically modified transgenic crop Golden rice is :
 - High lysine content
 - Insect resistant
 - High protein content
 - High vitamin-A content
- Assertion (A):Agro bacterium tumefaction's is a pathogen of several monocot plants.
Reason (R):It is able to deliver a piece of DNA known as T-DNA to transform normal plant cells into a tumour.
- Assertion (A): Indian Government has set up an organisation known as GEAC to decide the validity of GM research.
Reason (R): Genetic modification of organisms has no effect when such organisms are introduced in the ecosystem.
- Given below are two columns. In Column I is the list of four enzymes and in Column II is the list of functions of the given enzymes. Which one of the following options shows the enzymes matched with their respective functions correctly?

Column I
(Enzyme)

Column II
(Function)

- P. DNA Ligase
Q. Restriction exonuclease
R. Taq polymerase
S. Restriction endonuclease
- i. Removes nucleotides from ends of DNA
ii. Extends primer on a DNA template
iii. Joins the DNA fragments
iv. Cuts DNA at a specific position
- Options:
(a) P-i, Q-ii, R-iv, S-iii
(b) P-iv, Q-iii, R-ii, S-i
(c) P-i, Q-iv, R-iii, S-ii
(d) P-iii, Q-i, R-ii, S-iv
6. The organism used in construction of the first artificial recombinant DNA by Cohen and Boyer in 1972 was :
(a) E. coli
(b) Salmonella typhimurium
(c) Agrobacterium tumefaciens
(d) Bacillus thuringiensis
7. Who among the following challenged the patent right granted to the University?
(a) Mr. Ajay Phadke
(b) Ms. Vandana Shiva
(c) Dr. Venugopalan
(d) Dr. R.A. Mashelkar
8. The main use of recombinant DNA technology are.....
(a) production of transgenic humans.
(b) the creation of cells capable of synthesizing economically important molecules.
(c) the efficient reduction of useful proteins.
(d) both b and c
9. A bioreactor refers to
(a) Fermentation tank
(b) organisms reacting to stimuli
(c) Nuclear reactor for biochemical reactions
(d) Tank & biochemical reactions
10. Gel electrophoresis is used for—
(a) Isolation of DNA molecule
(b) Cutting of DNA into fragments
(c) Separation of DNA fragments according to their size
(d) Construction of recombinant DNA by joining with cloning Vector
11. Which one of the following Palindromic base sequences in DNA can be easily cut at about the middle by some Particular restriction enzyme?
(a) 5' _____ GATATG _____ 3'
3' _____ CTACTA _____ 5'
(b) 5' _____ GAATTC _____ 3'
3' _____ CTTAAG _____ 5'
(c) 5' _____ CACGTA _____ 3'
3' _____ CTCAGA _____ 5'
(d) 5' _____ CGTTCG _____ 3'
3' _____ ATGGTA _____ 5'
12. Which enzyme is used to break the cell wall to release fungal DNA?
(a) Lysozyme
(b) chitinase
(c) Cellulase
(d) All the above
13. Exploitation of Patent of biological resources of other nations is called as -
(a) Biosafety
(b) Biopiracy
(c) Bio-war
(d) Bio-abuse
14. Which technology facilitates the production of novel DNA molecule by combining sequences from DNA from two different organisms?
(a) gene therapy
(b) Recombinant DNA technology
(c) Polymerase chain reaction
(d) germ line gene therapy

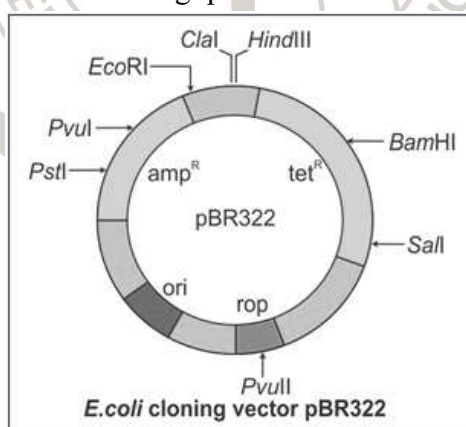
15. Transgene introduced in the first transgenic cow was responsible for the production of
- (a) Albumin enriched milk (b) Protein enriched milk
- (c) Human protein enriched milk (d) Vitamins enriched milk

Answer the following questions:

- What is the role of restriction endonuclease in biotechnology?
- Restriction endonuclease usually isolated from bacteria and bacteria use it for its self-protection. How?
- _____ and _____ are two main processes used in downstream processing.
- Name the enzyme that is used to dissolve cell wall of bacteria and plant.
- A rDNA is inserted in the coding sequence of an enzyme and which inactivates the gene. Give the term for that.
- Name two natural genetic engineer used in biotechnology process.
- Complete the table given below:

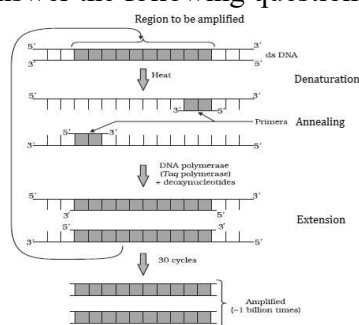
Processes	Enzyme involved
Cutting of DNA fragments at specific site	
Joining of foreign DNA fragments with plasmid	
Amplification of DNA fragments	
Dissolve fungal cell wall	

- DNA being hydrophilic cannot pass through the cell membrane of a cell. Explain how recombinant DNA get introduced into the cell to transform the latter.
- In bacterial culture some of the colonies produce blue colour in the presence of achromogenic substrate and some did not due to the presence or absence of an insert (rDNA) in the coding sequence of the beta-galactosidase.
 - Mention the mechanism and steps involved in the above experiments.
 - How is it better than the technique of plating on two plates having different antibiotics.
- From the above diagram answer the following question:

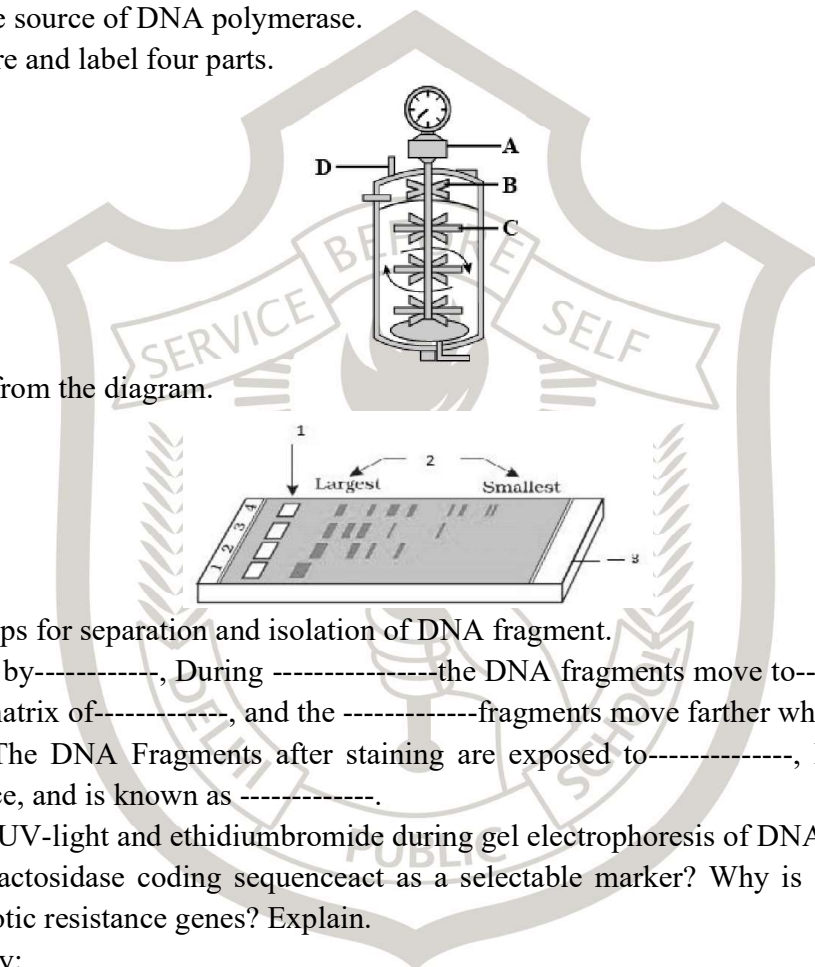


- Name the restriction sites
- What is Rop?
- Name two antibiotic resistance genes.

11. Study the figure given above and answer the following questions given below



- (a) What does the figure represent?
 - (b) Name its three steps.
 - (c) What is the source of DNA polymerase.
12. Identify the figure and label four parts.



13. Mention 1, 2, 3 from the diagram.

14. Complete the steps for separation and isolation of DNA fragment.
Cutting of DNA by-----, During -----the DNA fragments move to----- DNA fragments separate in the matrix of-----, and the -----fragments move farther whereas-----fragments remain nearer. The DNA Fragments after staining are exposed to-----, Fragments are extruded from the gel piece, and is known as -----.
15. State the role of UV-light and ethidiumbromide during gel electrophoresis of DNA fragments.
16. How does β -galactosidase coding sequence act as a selectable marker? Why is it a preferred selectable marker to antibiotic resistance genes? Explain.
17. Give reasons why:
 - (a) DNA cannot pass into a host cell through the cell membrane.
 - (b) Proteases are added during isolation of DNA for genetic engineering.
18. (a) Why must a cell be made 'competent' in biotechnology experiments? How does calcium ion help in doing so?
(b) State the role of 'biolistic gun' in biotechnology experiments.
19. Name the source organism from which Ti plasmid is isolated. Explain the use of this plasmid in biotechnology.
20. (a) What is EcoRI? What does 'R' represent in this?
(b) Give the palindromic nucleotide sequence recognised by it.

- (c) Explain its action.
21. What is called a 'palindromic sequence' in a DNA?
 22. (a) Mention the role of vectors in recombinant DNA technology. Given any two examples.
(b) With the help of diagrammatic representation only, show the steps of recombinant DNA technology.
 23. Differentiate between rDNA and cDNA.

PHYSICS (042)

1. A convex lens is placed in contact with a plane mirror. A point object at a distance of 20 cm on the axis of this combination has its image coinciding with itself. What is the focal length of the lens?
2. How does the refractive index of a transparent medium depend on the wavelength of incident light used? Velocity of light in glass is 2×10^8 m/s and in air is 3×10^8 m/s. If the ray of light passes from glass to air, calculate the value of critical angle.
3. An object is kept in front of a concave mirror of focal length 15 cm. The image formed is real and three times the size of the object. Calculate the distance of the object from the mirror.
4. (a) Derive the mathematical relation between refractive indices n_1 and n_2 of two media and radius of curvature R for refraction at a convex spherical surface. Consider the object to be a point source lying on the principal axis in rarer medium of refractive index n_1 and a real image formed in the denser medium of refractive index n_2 . Hence, derive lens maker's formula
(b) Light from a point source in air falls on a convex spherical glass surface of refractive index 1.5 and radius of curvature 20 cm. The distance of light source from the glass surface is 100cm. At what position is the image formed?
5. A small telescope has an objective lens of focal length 150 cm and eyepiece of focal length 5 cm. What is the magnifying power of the telescope for viewing distant objects in normal adjustment? If this telescope is used to view a 100m tall tower 3km away, what is the height of the image if the tower formed by the objective lens?
6. You are given two converging lenses of focal length 1.25 cm and 5 cm to design a compound microscope. If it is desired to have a magnification of 30, find out the separation between the objective and the eyepiece.
7. Two thin lenses of power -4D and 2D are placed in contact coaxially. Find the focal length of the combination.
8. Derive the relation for the refractive index of the prism in terms of the angle of minimum deviation and angle of prism.

CHEMISTRY (043)

- **Revise the chapters (Haloalkanes and Haloarenes/ Alcohols, Phenols and Ethers/ Coordination Compounds) thoroughly before attempting following questions.**
 - **Attempt these questions in class-work notebook.**
1. How can you synthesize methyl chloride from methane?
 2. Explain the mechanism of nucleophilic substitution reactions (SN_1 and SN_2) with examples. How does the structure of the haloalkane affect the rate of these reactions?
 3. What are the physical properties of haloalkanes? How do they differ from alcohols and ethers in terms of boiling points and solubility in water?
 4. What is the difference between a haloalkane and a haloarene in terms of reactivity? Discuss two aromatic substitution reaction in haloarenes with suitable examples.

- Discuss the environmental impact of halogenated compounds, specifically CFCs (Chlorofluorocarbons). How do they contribute to ozone depletion?
- Describe the methods for preparing alcohols from alkenes. Compare the acid-catalyzed hydration and hydroboration-oxidation methods.
- Explain the acidic and basic properties of phenols. How does the presence of substituents like -OH and -NO₂ influence the acidity of phenols?
- Write the reaction mechanism for the preparation of ethers from alcohols. How is the Williamson ether synthesis different from the acid-catalyzed dehydration of alcohols?
- How do alcohols differ from phenols in terms of their reaction with reactive metals like sodium? Compare their reactivity with sodium.
- What are coordination compounds? Define the terms: ligand, coordination number, and oxidation state. Give an example of a coordination compound and explain its bonding structure.

ACCOUNTANCY (055)

- Software Solution India Ltd. invited applications for 25,000 equity shares of ₹ 100 each, payable ₹ 40 on application, ₹ 30 on allotment and ₹ 30 on first and final call. The company received applications for 32,000 shares. Applications for 2,000 shares were rejected and money returned to applicants. Applications for 10,000 shares were accepted in full and applicants for 20,000 shares allotted remaining shares and excess application money adjusted into allotment. All money due on allotment and call was received. Pass necessary Journal Entries.
- Lotus Ltd. invited applications for issuing 80,000 equity shares of ₹ 10 each at a premium of ₹ 4 per share. The amount was payable as follows: On application ₹ 5 per share and On allotment ₹ 9 per share (included premium). Applications were received for 1,40,000 shares and allotment was made to all applicants on pro-rata basis. Money overpaid on applications was adjusted towards sums due on allotment. Rajiv, who had applied for 1,400 shares, failed to pay the allotment money. His shares were forfeited. Later on, these forfeited shares were reissued at ₹ 9 per share as fully paid up. Pass necessary journal entries for the above transactions in the books of Lotus Ltd.
- Qumtan Ltd. invited applications for issuing 1,00,000 equity shares of ₹ 10 each at a premium of ₹ 6 per share. The amount was payable as follows :
On Application and Allotment ₹ 8 per share (including premium ₹ 3)
On First and Final call Balance (including premium)
Applications for 1,60,000 shares were received. Applications for 10,000 shares were rejected and pro-rata allotment was made to the remaining applicants. Excess money received on application and allotment was returned. Dheeraj, who was allotted 200 shares, failed to pay the first and final call money. His shares were forfeited. All the forfeited shares were reissued at ₹ 5 per share fully paid up. Pass necessary journal entries.
- Nidiya limited was incorporated on 1st April 2017 with registered office in Mumbai. The capital clause of memorandum of Association reflected a registered capital of 8, 00, 000 equity shares of Rs.10 each and 1, 00,000 preference shares of Rs.50 each. Since some large investments were required for building and machinery the company in consultation with vendors, Ms. VPS Enterprises, issued 1,00,000 equity shares and 20,000 preference shares at par to them in full consideration of assets acquired. Besides this the company issued 2,00,000 equity shares for cash at par payable as Rs. 3 on application, 2 on allotment, 3 on first call and 2 on second call. Till date second call has not yet been made and all the shareholders have paid except Mr. Ajay who did not pay allotment and calls on his 300 shares and Mr. Vipul who did not

pay first call on his 200 shares. Shares of Mr. Ajay were then forfeited and out of them 100 shares were reissued at Rs.12 per share. Based on above information you are required to answer the following questions

- (a) Shares issue to vendors of building and machinery, Ms. VPS Enterprises, would be classified as:
 - (i) Preferential Allotment
 - (ii) Employee Stock Option Plan
 - (iii) Issue for Consideration other than cash
 - (iv) Right Issue of Shares
- (b) How many equity shares of the company have been subscribed?
 - (i) 3,00,000
 - (ii) 2,99,500
 - (iii) 2,99,800
 - (iv) None of these
- (c) What is the amount of security premium reflected in the balance sheet at the end of the year?
 - (i) ₹200
 - (ii) ₹600
 - (iii) ₹400
 - (iv) ₹ 1,000
- (d) What amount of share forfeiture would be reflected in the balance sheet?
 - (i) ₹600
 - (ii) ₹900
 - (iii) ₹200
 - (iv) ₹ 300
- (e) What amount of share forfeiture would be transferred to capital reserve?
 - (i) ₹600
 - (ii) ₹900
 - (iii) ₹200
 - (iv) ₹ 300
- (f) What is the amount of Authorised capital?

BUSINESS STUDIES (054)

1. Answer in one word:
 - (a) The framework of authority and responsibility.
 - (b) The process of filling and keeping filled the positions in the organisation.
 - (c) The part of financial decision which relates to distribution of earnings.
2. "Under this process, subordinates are trained by placing them on similar jobs and learning under the guidance of superiors." Which type of training method is being referred here?
3. Which of the following statements is false about Decentralisation?
 - (a) It reduces the workload of top management.
 - (b) It promotes initiative among subordinates.
 - (c) It increases the burden of routine decision-making on top management.
 - (d) It facilitates better control at lower levels.
4. "Recruitment is a positive process whereas selection is a negative process." Give reason.
5. Which of the following is not a feature of Formal Organisation?
 - (a) It has a well-defined structure.
 - (b) It is deliberately created by management.
 - (c) It is based on established rules and procedures.
 - (d) It emerges spontaneously from social interaction.
6. Statement I: Financial planning avoids over-capitalisation and under-capitalisation.
Statement II: Dividend decision is concerned with raising funds from different sources.
7. Statement I: Recruitment involves rejection of unsuitable candidates. Statement II: Selection is a positive process as it creates a pool of candidates.

8. The Government of India launched the “Make in India” initiative. Companies were asked to manufacture goods locally. The HR Manager of a company identified manpower requirements, recruited skilled engineers, and trained them in modern production technology.
- Identify the function of management being performed here.
 - State any four points highlighting its importance.
9. ABC Ltd. is planning to expand its business. For this it requires additional capital. The finance manager has to decide the proportion of debt and equity in the capital structure.
- Identify the type of decision involved.
 - State any four factors affecting this decision.
10. Mr. Sharma wants to invest in the Primary Market.
- Identify any two methods through which companies can raise funds in this market.
 - Distinguish between Primary Market and Secondary Market on any two bases.
11. A school principal ensures smooth functioning of the school by assigning duties to teachers, forming various departments, and delegating authority among coordinators. She regularly monitors school activities and motivates teachers through feedback and recognition. (i) Identify the two functions of management being performed. (ii) Explain the significance of each in organisational effectiveness.
12. Read the following text and answer the following questions on the basis of the same:
- Mr. Vikas Goel is an H.R. Manager of “Sanduja Furniture Private Limited.” At the beginning of the new year he anticipated that the company will need 30 new additional persons to fill up different vacancies. He gave an advertisement in the newspaper inviting applications for filling up different vacant posts. As many as 120 applications were received. The same were scrutinized. Out of these, conditions of 15 applicants were not acceptable to the company. Letters of regret, giving reasons, were sent to them. Remaining candidates were called for preliminary interview. The candidates called for were asked to fill up blank application forms. Thereafter, they were given four tests. The objective of the first test was to find out how much interest the applicant takes in his work. The objective of the second test was to find out ‘specialization’ of the applicant in any particular area. Third test aimed at making sure whether the applicant was capable of learning through training or not. The purpose of the fourth test was to find out how much capability a person has to mix-up with other persons, and whether he can influence other persons and get influenced by them.
- The purpose of the fourth test was to find out how much capability a person has to mix-up with other persons, and whether he can influence other persons and get influenced by them. Which tests is indicated in this situation?
 - Personality Test
 - Intelligent Test
 - Aptitude Test
 - Trade Test
 - At the beginning of the New Year he anticipated that the company will need 30 new additional persons to fill up different vacancies. Identify the first step of staffing.
 - Placement and Orientation
 - B. Training and Development
 - C. Recruitment
 - D. Estimating Manpower Requirement
 - From the given lines, ‘Out of these, conditions of 15 applicants were not acceptable to the company.’ Letters of regret, giving reasons, were sent to them. Which aspect of staffing is highlighted in the statement?
 - Recruitment
 - Selection
 - Training
 - Education

- (d) The applicants were given four tests like intelligent test to interest test after filling up blank application form. Identify which step of selection process was followed by the management.
- | | |
|------------------------|--------------------------|
| (i) Selection Decision | (ii) Selection Test |
| (iii) Job Offer | (iv) Medical Examination |

ECONOMICS (030)

- From the following data, calculate National Income at Factor Cost (NNPFC) using the Income Method:
(All figures in ₹ crores)
 - Compensation of employees = 20,000
 - Rent = 2,500
 - Interest = 3,000
 - Profit = 4,500
 - Mixed income of self-employed = 6,000
 - Net factor income from abroad = 800
 - Consumption of fixed capital = 1,200
 - Indirect taxes = 1,500
 - Subsidies = 300
- Calculate GDP at Market Price using the Expenditure Method from the following data (₹ crores):
 - Private Final Consumption Expenditure = 9,000
 - Government Final Consumption Expenditure = 2,500
 - Gross Domestic Capital Formation = 3,000
 - Exports = 1,200
 - Imports = 1,500
- From the following data, calculate Net Value Added at Factor Cost (NVAFC) of a firm (₹ lakhs):
 - Sales = 1,000
 - Change in stock = +50
 - Purchase of raw materials = 600
 - Purchase of machines = 200
 - Depreciation = 40
 - Net indirect taxes = 60
- An economy's Nominal GDP in 2022 is ₹ 50,000 crore, and in 2023 it rises to ₹ 60,000 crore. The GDP deflator indicates that prices have risen by 20%. Calculate Real GDP for 2023 and explain whether the rise in Nominal GDP reflects actual growth in output.
- Explain in detail the precautions to be taken while calculating National Income by Value Added Method. Why is it necessary to avoid double counting?
- "National Income is considered an important measure of economic growth but not of economic welfare." Discuss this statement by giving five valid reasons.

HISTORY (027)

- Attempt all questions as instructed.
- Support your answers with relevant historical examples, dates, and illustrations where required.
- Use separate sheets for different sections.
- Ensure neatness and originality in your work.

1. Write a short note on the urban planning of the Harappan Civilization. Support with a labeled sketch/map.
2. Briefly explain the role of inscriptions in reconstructing early Indian history.
3. How did the rules of marriage reflect the social structure in early societies?
4. Compare Buddhist and Brahmanical traditions of worship with reference to architecture.
5. Map Work: Locate and label the following on the political map of India: Lothal, Rajgir, Ajanta, Agra, and Amritsar.
6. Examine the role of women in early societies with reference to Mahabharata as a source.
7. Historical Biography: Prepare a short project (800–1000 words) on King Ashoka
8. Prepare a report and mention what you noticed in the Gaya Museum explaining the artifacts and idols that you had seen.

POLITICAL SCIENCE (028)

CHAPTER 1: THE END OF BIPOLARITY

1. “The disintegration of the USSR ended the Cold War but gave rise to new tensions.”
Analyse this statement with examples. (6 Marks)
2. Evaluate the successes and failures of “Shock Therapy” in post-Soviet states. (4 Marks)
3. How did India’s foreign policy adjust after the collapse of the USSR?
Give arguments. (6 Marks)

CHAPTER 2: CONTEMPORARY CENTRES OF POWER

1. Critically examine whether the European Union can be considered a “superpower in the making.” (6 Marks)
2. Compare the strategies of the EU and ASEAN in promoting regional integration.
What lessons can South Asia learn? (6 Marks)
3. Analyse the role of China’s economic reforms (post-1978) in reshaping global power equations. (4 Marks)

CHAPTER 4: ALTERNATIVE CENTRES OF POWER

1. Assess the continuing relevance of NAM in a unipolar/multipolar world.
(6 Marks, PYQ)
2. “BRICS has emerged as a strong voice of the Global South.”
Analyse this in light of BRICS+ expansion in 2024. (6 Marks)
3. Critically examine the role of Japan and China as alternative centres of power in Asia. (6 Marks)

CHAPTER 5: CONTEMPORARY SOUTH ASIA

1. Analyse the main reasons for continuing tension between India and Pakistan.
Do you think these can be resolved through regional organisations like SAARC?
(6 Marks, PYQ)
2. Evaluate the role of India–Sri Lanka relations in shaping South Asian politics. (4 Marks)
3. “South Asia is both a region of conflicts and cooperation.”
Justify this statement with examples. (6 Marks, PYQ)

CHAPTER 6: INTERNATIONAL ORGANISATIONS

1. “The UN needs urgent reforms to remain effective in the 21st century.”
Evaluate this statement with reference to India’s demand for a permanent seat in the UNSC.
(6 Marks, PYQ)
2. Assess the role of the United Nations in peacekeeping operations in the post-Cold War era. (6 Marks)
3. Critically analyse whether international organisations like the WTO and IMF favour developed nations over developing ones. (6 Marks)

CHAPTER 7: SECURITY IN THE CONTEMPORARY WORLD

1. Distinguish between traditional and non-traditional security.
Which do you think poses a bigger threat today? Substantiate your answer. (6 Marks, PYQ)
2. Evaluate the role of cooperative security arrangements (e.g., NATO, QUAD, ASEAN Regional Forum) in contemporary world politics. (6 Marks)

3. "Cyber security and terrorism are more dangerous than conventional wars in today's world." Comment. (6 Marks)

CHAPTER 8: ENVIRONMENT AND NATURAL RESOURCES

1. "Climate change is the greatest non-traditional security threat."
Evaluate this statement in light of global negotiations (Paris Agreement, COP29). (6 Marks)
2. Assess the principle of "Common but Differentiated Responsibilities" (CBDR) in addressing global environmental issues. (6 Marks, PYQ)
3. Critically examine India's role in global environmental politics. (6 Marks)

CHAPTER 9: GLOBALISATION

1. "Globalisation has both integrated and divided the world."
Evaluate this statement with suitable examples. (6 Marks, PYQ)
2. Critically examine the economic and cultural consequences of globalisation in India. (6 Marks, PYQ)
3. Do you agree that globalisation has eroded the role of the nation-state? Give arguments for and against. (6 Marks)

ASSERTION-REASON BASED QUESTIONS

(Question numbers 1 and 3 are Assertion-Reason based questions carrying 1 mark each. Two statements are given, one labelled Assertion (A) and the other labelled Reason (R). Select the correct answer from the options (A), (B), (C) and (D) as given below.

- (a) Both (A) and (R) are true and (R) is the correct explanation for (A).
 - (b) Both (A) and (R) are true but (R) is not the correct explanation for (A).
 - (c) (A) is true but (R) is false.
 - (d) (A) is false but (R) is true.
1. Assertion (A): BRICS has become a counterweight to Western dominance.
Reason (R): It represents the interests of the Global South.
 2. Assertion (A): UN reforms are essential for global peace.
Reason (R): The structure of the UNSC reflects the realities of 1945, not today.
 3. Assertion (A): Non-traditional security threats are more pressing than traditional threats.
Reason (R): They affect people directly, not just state boundaries.

GEOGRAPHY (029)

1. Comprehensive Project Question:

"Discuss the distribution and importance of mineral and energy resources in India, the need for their conservation, and how sustainable development and improved transport, communication, and trade can help solve geographical problems like pollution, land degradation, and urban slums."

What students should cover?

On A4 sheets (in a transparent file), students should include:

- Introduction
- Briefly explain what natural resources are (minerals and energy).
- Why they are important for a country like India.
- Mineral and Energy Resources
- Major types: Iron, coal, petroleum, solar, wind, etc.
- Map showing major mineral belts.
- Need for conservation of these resources.
- Sustainable Development
- What is it and why it matters.
- Case studies (brief): Bharmaur, Indira Gandhi Canal.
- Transport and Communication
- Types (road, rail, air, etc.).
- How they support development and trade.
- International Trade

- Major exports and imports.
- Key seaports and airports of India.
- Geographical Problems
- Pollution (types), land degradation, waste disposal, slums.
- How planning and sustainability can reduce these problems.
- Conclusion
- Summary of key points.
- Simple suggestions for the future.

2.

Map Work

Book: Fundamentals of Human Geography

(Map work on identification of features based on units I to III on the outline physical/political map of the World)

Chapter	Map item (Map present on official website of Govt. of India should be used)
Chapter 1 -Human Geography	
Chapter 2 The World Population Density Distribution and Growth	
Chapter 3 Human Development	
Chapter 4 Primary Activities	Areas of subsistence gathering (Fig 4.2) Major areas of nomadic herding of the world (Fig 4.4) Major areas of commercial livestock rearing (Fig 4.6) Major areas of extensive commercial grain farming (Fig 4.12) Major areas of mixed farming of the World (Fig 4.14)
Chapter 5 -Secondary Activities	
Chapter 6 Tertiary and Quaternary Activities	
Chapter 7 Transport Communication and Trade	Terminal Stations of Transcontinental Railways Trans-Siberian, Trans Canadian, Trans-Australian Railways Major Sea Ports Europe: North Cape, London, Hamburg North America: Vancouver, San Francisco, New Orleans South America: Rio De Janeiro, Colon, Valparaiso Africa: Suez and Cape Town Asia: Yokohama, Shanghai, Hong Kong, Aden, Karachi, Kolkata Australia: Perth, Sydney, Melbourne Major Airports: Asia: Tokyo, Beijing, Mumbai, Jeddah, Aden Africa: Johannesburg & Nairobi Europe: Moscow, London, Paris, Berlin and Rome North America: Chicago, New Orleans, Mexico City South America: Buenos Aires, Santiago Australia: Darwin and Wellington Inland Waterways Suez Canal, Panama Canal, Rhine waterways and St. Lawrence Seaways
Chapter 8 International Trade	

Map Work

Book: India People and Economy

(Map work on locating and labelling of features based on outline political/physical map of India.)

Chapter	Map item (Map present on official website of Govt. of India should be used)
Chapter 1 -Population Distribution Density Growth and Composition	State with highest population density & state with lowest population density (2011)
Chapter 2 -Human Settlement	
Chapter 3 -Land Resources and Agriculture	Leading producing states of the following crops: (a) Rice (b) Wheat (c) Cotton (d) Jute (e) Sugarcane (f) Tea and (g) Coffee
Chapter 4 -Water Resources	Nil
Chapter 5 -Mineral And Energy Resources	Mines: <ul style="list-style-type: none">• Iron-ore mines: Mayurbhanj, Bailadila, Ratnagiri, Bellary• Manganese mines: Balaghat, Shimoga• Copper mines: Hazaribagh, Singhbhum, Khetari• Bauxite mines: Katni, Bilaspur and Koraput• Coal mines: Jharia, Bokaro, Raniganj, Neyveli• Oil Refineries: Mathura, Jamnager, Barauni
Chapter 6 -Planning and Sustainable Development in Indian Context	
Chapter 7 -Transport and Communication	
Chapter 8 -International Trade	<ul style="list-style-type: none">• Major Sea Ports: Kandla, Mumbai, Marmagao, Kochi, Mangalore, Tuticorin, Chennai, Vishakhapatnam, Paradwip, Haldia• International Airports: Ahmedabad, Mumbai, Bengaluru, Chennai, Kolkata, Guwahati, Delhi, Amritsar, Thiruvananthapuram & Hyderabad.
Chapter 9 - Geographical Perspective on selected issues and problems	

PSYCHOLOGY (037)

1. Development of case profile: Using appropriate methods like interview, observation & psychological tests.
[for e.g. make a case profile on a child who is having ADHD emphasizing on his symptoms by using method like behaviour observation, interview etc.]
2. Make mind map on the following topics:
 - Theories of intelligence
 - Freud's psychosexual stages

- Trait theories, Type theories along with Post Freudian theories
- All the types of psychological disorders along with neurodevelopment disorders
- All the type of psychotherapies
- Total mind map on the chapter 6 (Attitude and Social Cognition)

3. Solve the following case studies:

- Read the case 1 and answer the questions that follow.

On November 26, 2008, about 35 employees of Taj Hotel Mumbai, led by a 24-year old banquet manager, Mallika, were assigned to manage the event in a second-floor banquet room. As they served the main course, they heard what they thought were fireworks at a nearby wedding. In reality, these were the first gunshots from terrorists who were storming the Taj Hotel, Mumbai. The staff quickly realised something was wrong. Mallika locked the doors and turned off the lights. She asked everyone to lie down quietly under tables and refrain from using cell phones. The group stayed there all night, listening to the terrorists rampaging through the hotel, hurling grenades, firing automatic weapons, and tearing the place apart. During the onslaught on the Taj Mumbai, 31 people died and 28 were hurt, but the very next day the hotel received praise. Its guests were overwhelmed by employees' dedication to duty, their desire to protect guests without considering their own personal safety, and their quick thinking. As many as 11 Taj Mumbai employees—a third of the hotel's casualties—laid down their lives while helping around 1,200 to 1,500 guests escape.

With reference to the above case, answer the following questions:

- In reality, these were the first gunshots from terrorists who were storming the Taj Hotel, Mumbai. The staff quickly realised something was wrong. Which stage of the General Adaptation Syndrome model were the staff in?
 - Resistance
 - Alarm reaction
 - Exhaustion
 - Burnout
- Mallika locked the doors and turned off the lights. She asked everyone to lie down quietly under tables and refrain from using cell phones'. From these lines, identify the coping strategy used by Mallika.
 - Task-oriented
 - Avoidance-oriented
 - Emotion-oriented
 - Biofeedback
- Which of the following set of words best describe Mallika's hardiness?
 - Commitment, confidence, control
 - Challenge, control, calmness
 - Commitment, control, challenge
 - Control, commitment, conviction
- Selye's GAS model has been criticized largely for assigning limited role tofactors.
 - Biological
 - Physical
 - Physiological
 - Psychological

- **Read the case 2 and answer the questions that follow.**

In the Army, one cannot sit back and relax. A few years after the Kargil War, Deep chand's regiment was posted to Rajasthan. While setting up an ammunition store, a bomb was accidentally detonated. In the explosion, Deep hand lost his fingers. Later both his legs and right arm were amputated. After 24 hours and 17 bottles of blood, he finally gained consciousness. After the accident, lying on the hospital bed, Deep hand mulled over why he met with an accident. Being an athlete, he felt bad about not being able to run for the state again. But as they say, once a soldier, always a soldier. "I trained myself to walk with the help of prosthetics. I learnt to ride a scooter and use a computer. And there has been no looking back," he said. Deep hand has worked for the country without flinching even an eyelid. And in doing so, in an

unfortunate event, he met with an accident and lost his limbs. Does he regret his childhood dream to become an army jawan? The proud man who stands on his prosthetic feet says he does not. "The accident could have happened to me in any profession. At least it happened in the line of fire. I want to be reborn a soldier. There's nothing greater than serving your country," he said.

- (a) Identify the phenomenon that Deep hand is experiencing immediately after regaining consciousness in the hospital.
- | | |
|-----------------------|---------------|
| (i) Eustress | (ii) Distress |
| (iii) Social Pressure | (iv) Hassles |
- (b) Deep hand's secondary appraisal of the event would be _____
- | | |
|---|--|
| (i) Appraisal of the threat | (ii) Appraisal of the harm |
| (iii) Appraisal of his coping abilities and resources | (iv) Appraisal of the challenges ahead |
- (c) Based on the below given statement, what will determine Deep chand's cognitive appraisal of the event: "The accident could have happened to me in any profession. At least it happened in the line of fire. I want to be reborn a soldier. There's nothing greater than serving your country," he said.
- | | |
|------------------------------|---|
| (i) Controllability only | (ii) Past and present experiences |
| (iii) Present situation only | (iv) Past experiences and controllability |
- (d) What was the source of Deep hand's stress?
- | | |
|-----------------|-----------------------|
| (i) Life events | (ii) Traumatic events |
| (iii) Hassles | (iv) Environmental |

COMPUTER SCIENCE (083)

1. State True or False:
"In a Python program, if a break statement is given in a nested loop, it terminates the execution of all loops in one go."
2. Predict the output of the following Python code:
- ```
s1="SQP-25"
s2=""
i=0
while i<len(s1):
 if s1[i]>='0' and s1[i]<='9':
 Num=int(s1[i])
 Num-=1
 s2=s2+str(Num)
 elif s1[i]>='A' and s1[i]<='Z':
 s2=s2+s1[i+1]
 else:
 s2=s2+'^'
 i+=1
print(s2)
```
3. Mr. Ravi, a manager at a tech company, needs to maintain records of employees. Each record should include: Employee\_ID, Employee\_Name, Department and Salary. Write the Python functions to:
- (a) Input employee data and append it to a binary file.
- (b) Update the salary of employees in the "IT" department to 200000.



4. Consider the table **SALES** as given below:

| sales_id | customer_name | product    | quantity_sold | price |
|----------|---------------|------------|---------------|-------|
| S001     | John Doe      | Laptop     | 5             | 50000 |
| S002     | Jane Smith    | Smartphone | 10            | 30000 |
| S003     | Michael Lee   | Tablet     | 3             | 15000 |
| S004     | Sarah Brown   | Headphones | 7             | 2000  |
| S005     | Emily Davis   | Smartwatch | 8             | 8000  |
| S006     | David         | Smartwatch | 3             | 16000 |
| S007     | Mark          | Tablet     | 5             | 34000 |

**Write the following queries:**

- To display the total quantity sold for each product whose total quantity sold exceeds 12.
  - To display the records of SALES table sorted by Product name in descending order.
  - To display the distinct Product names from the SALES table.
  - To display the records of customers whose names end with the letter 'e'.
5. Write a function **ETCount()** in Python, which should read each character of a text file **"TESTFILE.TXT"** and then count and display the count of occurrence of alphabets E and T individually (including small cases e and t too).  
Example:  
If the file content is as follows:  
Today is a pleasant day.  
It might rain today.  
It is mentioned on weather sites.  
The ETCount() function should display the output as:  
E or e: 6  
T or t : 9
6. Write a Python function **add\_contact()** that accepts a dictionary **phone\_book**, a name, and a phone number. The function should add the name and phone number to the dictionary. If the name already exists, print "Contact already exists" instead of updating it.

### INFORMATICS PRACTICES (065)

- Explain the following SQL functions using suitable examples:
  - UCASE()
  - TRIM()
  - MID()
  - DAYNAME()
  - POWER()
- Which type of values will not be considered by SQL while executing the following statement?  
**SELECT COUNT(column name) FROM inventory;**
  - Numeric value
  - text value
  - Null value
  - Date value

3. Consider the given DataFrame 'Stock':

|   | Name                 | Price |
|---|----------------------|-------|
| 0 | Nancy Drew           | 150   |
| 1 | Hardy boys           | 180   |
| 2 | Diary of a wimpy kid | 225   |
| 3 | Harry Potter         | 500   |

Write suitable Python statements for the following:

- Add a column called Special\_Price with the following data: [135,150,200,440].
  - Add a new book named 'The Secret' having price 800.
  - Remove the column Special\_Price
4. Based on table sss given here, write suitable SQL queries for the following:

| Roll No | Name     | Class | Gender | City   | Marks |
|---------|----------|-------|--------|--------|-------|
| 1       | Abhishek | XI    | M      | Agra   | 430   |
| 2       | Prateek  | XII   | M      | Mumbai | 440   |
| 3       | Sneha    | XI    | F      | Agra   | 470   |
| 4       | Nancy    | XII   | F      | Mumbai | 492   |
| 5       | Himnashu | XII   | M      | Delhi  | 360   |
| 6       | Anchal   | XI    | F      | Dubai  | 256   |
| 7       | Mehar    | X     | F      | Moscow | 324   |
| 8       | Nishant  | X     | M      | Moscow | 429   |

- Display gender wise highest marks.
  - Display city wise lowest marks.
  - Display total number of male and female students.
5. Write suitable SQL query for the following:
- Display 7 characters extracted from 7 th left character onwards from the string 'INDIA SHINING'.
  - Display the position of occurrence of string 'COME' in the string 'WELCOME WORLD'.
  - Round off the value 23.78 to one decimal place.
  - Display the remainder of 100 divided by 9.
  - Remove all the expected leading and trailing spaces from a column userid of the table 'USERS'.

## PHYSICAL EDUCATION (048)

### Rikli & Jones - Senior Citizen Fitness Test

- Chair Stand Test – Lower Body Strength
- Arm Curl Test – Upper Body Strength
- Chair Sit-and-Reach Test – Lower Body Flexibility
- Back Scratch Test – Upper Body Flexibility
- Eight-Foot Up-and-Go Test – Agility
- Six-Minute Walk Test – Aerobic Endurance

## हिन्दी (302)

- पहाड़ी जीवन/ग्रामीण जीवन/दो कवियों की कविताओं की तुलना/समसामयिक विषय में से किसी एक पर लगभग दो हजार शब्दों में एक सचित्र परियोजना तैयार कीजिए।
- श्रीरामचरितमानस के अन्तर्गत सभी कांडों का संक्षिप्त परिचय दीजिए।

### **HINDUSTANI MUSIC (VOCAL) (034)**

1. Write Dhamar taal and its digun & chaugun.
2. Write the Drut kheyal of Raga Bageshri.

### **PAINTING (049)**

1. Draw one piece of folk art on an A4 sheet using any colour medium.
2. Create one landscape on an A4 sheet using watercolours.

### **YOGA (841)**

1. Explain the concept of Mitahara (moderation in diet) in Yoga. How can festivals like Durga Puja be celebrated while following yogic diet principles? Discuss the health benefits of adopting a yogic diet during festivals.”

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