



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

WINTER VACATION ASSIGNMENT CLASS-XII (SESSION: 2023-24)

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.

Please click on <https://www.dpsgaya.com/sample-test-paper.php> to access and download the Sample Papers of all the subjects. You have to download/take a print of the sample papers and solve them and submit to the respective subject teachers when the school reopens.

ENGLISH CORE (301)

1. Read the following text.
 1. Very often, we do not take the first step towards a good cause because we say to ourselves, “The task is so big. What can I do alone?” So nothing gets done. There is much talk about environmental protection, air pollution and saving our forests. Do we really care? If we do, here are a few things we can do to make our surroundings more pleasant.
 2. It is good to adopt a two-uses-attitude! By putting an article to a second use, we are giving it a longer lease of life and using up less raw material from nature. One of the worst things we do is the abuse of paper. The clean sides of envelopes can be used to write small notes, lists and reminders around the house. The more paper we use, the more trees will have to be cut down. For the same reason, we should avoid the use of paper napkins or paper plates. Cloth napkins are just as good, for they can be washed and used over and over again.
 3. Another area which needs the most urgent attention is effective garbage disposal. People who are conscious about it follow rules and laws strictly. As a result, their neighbourhoods are clean and beautiful. Similarly, each one of us can contribute to a cleaner environment. All kitchen waste should be collected separately. Those of you who have green fingers can turn this into valuable manure. Dig a pit and put the kitchen waste into it. When the pit is a little over half full, cover it up with mud. Let nature do the rest. Within three or six months, we will have a good garden manure. It can also be done as a community project by digging a large pit in the colony. Do take help of all the members, for nothing succeeds like co-operation.
 4. A lot of people don’t care about the environment because they don’t understand the adverse effect that society has on it. It is important to convince people to care about the environment. The first step would be to convince people to change by providing simple alternative solutions and ways of doing things. The internet is a powerful tool and a group on social media of like-minded people can be formed. People can share environmental stories and issues, as well as pool in solutions and alternatives to educate one another. With the current state that our planet is in, it is imperative that people actively care about the environment and most importantly to act now.
- Answer the following questions, based on the passage above.
- i. Select the option that classifies the reason for not taking first step towards a good cause.
 - (a) Because we feel that we are not responsible for that task.
 - (b) Because we feel that nothing gets done anyhow.
 - (c) Because we feel that the task is too big and we cannot do anything alone.
 - (d) Because we feel that it is not our work to fulfill the task.
 - ii. What is the significance of two-uses attitude in the given extract?
 - (a) Putting less material from nature.
 - (b) Putting an article to a second use giving it a longer lease of life.
 - (c) Putting an article to a second person.
 - (d) Putting the task apart itself.
 - iii. Share evidence from the text, in about 40 words, to support the view that the writer’s writing style is descriptive in nature.

- iv. Complete the sentence appropriately with a characteristic or description.
 The internet is a _____ and a group on social media of like-minded people can be formed.
- v. Select the option that is similar in meaning to the word ‘succeeds’.
- (a) happy (b) lost
 (c) triumph (d) sad
- vi. Explain in about 40 words, what procedure should one adopt for kitchen?
- vii. In the line, “...a lot of people don’t care about the environment because they don’t understand the adverse effect that society has on it.” What does the word ‘adverse’ mean here?
- viii. How does the following impact the reader?
 ‘There is much talk about environmental protection, air pollution and saving our forests’.

Answer in about 40 words.

- ix. Read the five options (1)–(5) given below.

- (1) More paper-less cutting of trees
 (2) Ineffective garbage disposal
 (3) Internet– a powerless tool
 (4) Adopt a two-uses attitude
 (5) Make unpleasant surrounding

Identify the option that DOES/DO corresponds with the passage.

- (a) (1) and (2) (b) Only (4)
 (c) (3) and (4) (d) Only (5)

2. You are Nidhi Aggarwal, Secretary of the Literary Club called Shakespearewala of your school. The literary club has produced some great theatre actors in the past and has a phenomenal repertoire of dramas. Now, it is putting up the famous Shakespeare play ‘The Taming of the Shrew’. The principal of your school has asked you to draft an invitation inviting the famous writer Mr. Ruskin Bond to be the Chief Guest at the event. Write the invitation in not more than 50 words. Invent necessary details as required.
3. Your friend, P.V. Nithish, has invited your family to attend the wedding of his sister, Jaya. You have your board examination on the day of the wedding. Since, south Indian weddings are traditionally morning events, you will not be able to attend the event. Write a formal reply in about 50 words to the family expressing your regret. You are Sushmitha Nair, M-114, Fort Road, Chennai.
4. After passing the secondary school examination, a candidate has to make a very difficult choice from a number of streams available to him for further studies at senior secondary level. There is no valid mechanism to assess the suitability of a candidate for a particular stream. The aggregate percentage is deemed sufficient to decide the stream of a candidate. Write a letter to the Editor of a National Daily emphasizing the need for educational counsellors for guidance in this matter in each school. You are Rishi Negi of Koregaon, Pune, Maharashtra.
5. By 2050, India will be amongst the countries which will face acute water shortage. You are highly alarmed and terrified of the future world without water. So, write an article on “Save water- are we doing enough?” for the local daily in 150-200 words.

MATHEMATICS (041)

1. The interval on which the function $f(x) = 2x^3 + 9x^2 + 12x - 1$ is decreasing is :
 (a) $[-1, \infty)$ (b) $[-2, -1]$
 (c) $(-\infty, -2]$ (d) $[-1, 1]$
2. If x is real, then the minimum value of $x^2 - 8x + 17$ is:
 (a) -1 (b) 0
 (c) 1 (d) 2
3. The distance moved by the particle in time t is given by $x = t^3 - 12t^2 + 6t + 8$. At the instant when its acceleration is zero, the velocity is :
 (a) 42 (b) -42
 (c) 48 (d) -48

4. The function $(x - \sin x)$ decreases for:

 - (a) all x
 - (b) $x < \frac{\pi}{2}$
 - (c) $0 < x < \frac{\pi}{4}$
 - (d) no value of x

5. The value of x for which $(x - x^2)$ is maximum, is

 - (a) $\frac{3}{4}$
 - (b) $\frac{1}{2}$
 - (c) $\frac{1}{3}$
 - (d) $\frac{1}{4}$

6. Let the function $g : (-\infty, \infty) \rightarrow \left(-\frac{\pi}{2}, \frac{\pi}{2}\right)$ be given by $g(u) = 2 \tan^{-1}(e^u) - \frac{\pi}{2}$. Then, g is:

 - (a) even and is strictly increasing in $(0, \infty)$
 - (b) odd and is strictly decreasing in $(-\infty, \infty)$
 - (c) odd and is strictly increasing in $(-\infty, \infty)$
 - (d) neither even nor odd, but is strictly increasing in $(-\infty, \infty)$

7. If the function $f(x) = kx^3 - 9x^2 + 9x + 3$ is monotonically increasing in every interval, then

 - (a) $k < 3$
 - (b) $k \leq 3$
 - (c) $k > 3$
 - (d) $k \geq 3$

8. The radius of a circle is increasing at the uniform rate of 3 cm/sec. At the instant when the radius of the circle is 2 cm, its area increases at the rate of

 - (a) $15\pi \text{ cm}^2/\text{s}$
 - (b) $6\pi \text{ cm}^2/\text{s}$
 - (c) $16\pi \text{ cm}^2/\text{s}$
 - (d) $12\pi \text{ cm}^2/\text{s}$

9. Find the interval in which the function f given by $f(x) = 7 - 4x - x^2$ is strictly increasing.

 - (a) $(\infty, -2)$
 - (b) $[-2, \infty)$
 - (c) $(-\infty, 3)$
 - (d) $[-3, 3]$

10. Find the set of values of 'b' for which $f(x) = b(x - \cos x) + 4$ is decreasing on \mathbb{R} .

 - (a) $[-5, 4)$
 - (b) $(-\infty, 0)$
 - (c) $(-1, 3]$
 - (d) $(-\infty, 2]$

Assertion-Reason Based Questions:

In the following questions 19 and 20, a statement of Assertion (A) is followed by a statement of Reason (R). Choose the correct answer out of the following choices.

- (a) Both (A) and (R) are true and (R) is the correct explanation of (A).
(b) Both (A) and (R) are true but (R) is not the correct explanation of A.
(c) (A) is true but (R) is false.
(d) (A) is false but (R) is true.

11. Assertion (A) : For $0 < x < \frac{\pi}{2}$, $\cos x \sin(\tan x) < \sin(\sin x)$

Reason (R): $\frac{\tan x}{x}$ is increasing function in $\left(0, \frac{\pi}{2}\right)$.

12. Assertion (A): The equation $2x^3 - 9x^2 + 12x - 6 = 0$ has only one real root.

Reason (R): The equation $f(x) = x^3 + px^2 + qx + r = 0, p, q, r \in R$ has three real roots if and only if $f(\alpha) \times f(\beta) < 0$ where α, β are the real roots of $f'(x) = 0$.

This section comprises of 3 case-study/passage based questions of 4 marks each with sub parts. The first two case study questions have three sub parts (i), (ii), (iii) of marks 1, 1, 2 respectively. The third case study question has two sub parts of 2 marks each.

13. An open water tank of aluminium sheet of negligible thickness, with a square base and vertical sides, is to be constructed in a farm for irrigation. It should hold 32000 l of water, that comes out from a tube well.



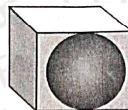
Based on above information, answer the following questions.

- (a) If the length, width and height of the open tank be x , x and y m respectively, then total surface area of tank.
- (b) Find the relation between x and y .
- (c) If outer surface area of tank is minimum, then find depth of tank.

OR

If cost of aluminium sheet is ₹360/m², then find the minimum cost for the construction of tank.

14. Shreya got a rectangular parallelepiped shaped box and spherical ball inside it as return gift. Sides of the box are x , $2x$, and $x/3$, while radius of the ball is r .



Based on the above information, answer the following questions:

- (a) If S represents the sum of volume of parallelepiped and sphere, then find S in terms of x and r .
- (b) If sum of the surface areas of box and ball are given to be constant k^2 , then find x .
- (c) Find the radius of the ball, when S is minimum.

OR

Find the minimum value of S .

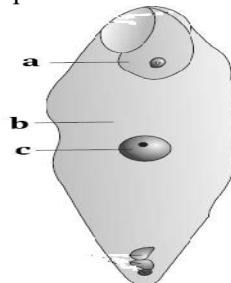
15. Two terms were playing football on a ground. Where David is running on the ground with the football along the curve given by $y = x^2 + 7$. He wanted to pass the football to the goalkeeper of his team. The goalkeeper was standing on the point $(3,7)$.

Based on the above information, answer the following questions:

- (a) At what point, the distance between David and goalkeeper is minimum?
- (b) At what point the slope of David's position is parallel to x-axis?

BIOLOGY (044)

1. (a) In the Figure of fertilized embryo – sac, identify ‘a’, ‘b’ and ‘c’.
 (b) State the fate of ‘a’ and ‘b’.
 (c) State the fate of antipodal cells and synergids after fertilisation.
 (d) How would the knowledge of pollen – pistil interaction helps a plant breeder?



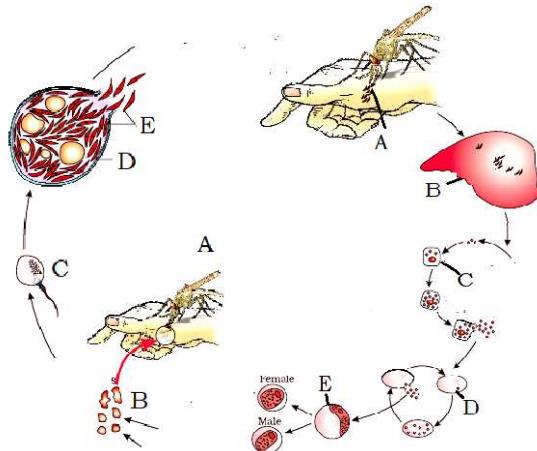
2. (a) Define Apomixis?

- (b) State its advantages.
 (c) How does it occur?
 (d) How is it different from parthenocarpy?
3. Explain with reason:
 (a) Not all copulations lead to fertilisation and pregnancy.
 (b) Only one sperm can fertilise an ovum.
 (c) The sex of the baby has been decided at zygote stage itself.
4. Given below is the representation of an amino acid composition of the relevant translated portion of β -chain of haemoglobin, related to the shape of human red blood cells.
-
- ```

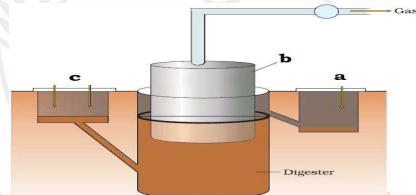
 CTC.... Gene ... GAG...
 ↓
 mRNA ... GAG ...
 ↓
 Val His Leu Thr Pro Glu Glu
 1 3 2 4 5 6 7
 HbA peptide

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- (a) Is this representation indicating a normal human or a sufferer from certain related genetic disease? Give reason in support of your answer.  
 (b) What difference would be noticed in the phenotype of the normal and the sufferer related to this gene?  
 (c) Who are likely to suffer more from the defect related to the gene represented the males, the females or both males and females equally? Why?
5. Dihybrid cross between two garden pea plants, one homozygous tall with round seeds, and the other dwarf with wrinkled seeds was carried out.  
 (a) Write the genotype and phenotype of the F<sub>1</sub> progeny obtained from this cross.  
 (b) Give the different types of gametes of the F<sub>1</sub> progeny.  
 (c) Write the phenotypes and its ratios of the F<sub>2</sub> generation obtained in this cross along with the explanation provided by Mendel.
6. (a) Explain the process of DNA replication with the help of a schematic diagram.  
 (b) In which phase of the cell cycle does replication occur in eukaryotes? What would happen if cell-division is not followed after DNA replication?
7. What does Hardy Weinberg's principle states? What are the factors which affects Hardy Weinberg's equilibrium?
8. Answer the following questions based on the life cycle of HIV:
- (a) Write the chemical nature of 'A'.  
 (b) Name the enzyme 'B' acting on 'X' to produce molecule 'C'. Name 'C' and 'X'.  
 (c) Name the host cell 'D' that the HIV attacks when it first enters the human body. What are these commonly called?  
 (d) Name the cell 'E' that the new viruses can attack.  
 (e) Name the broader group to which this virus belongs.  
 (f) How can the host cell protect other cells?
- 
- The diagram illustrates the life cycle of HIV. It starts with a virus particle (A) entering a normal cell. The virus injects its genetic material (X) into the cell. Inside the cell, the enzyme B acts on X to produce molecule C. New viral RNA is produced by the infected cell. Within the cell, the nucleus contains DNA. New viruses are produced and released from the cell. These new viruses (E) can then infect other cells.
9. The following figure represents the life cycle of malarial parasite in a host.  
 (a) Identify 'A' and mention its roles in the life cycle of malarial parasite.  
 (b) Identify the stage 'B' taken up by 'A'.  
 (c) Identify the process 'C'. Where is it occurring?

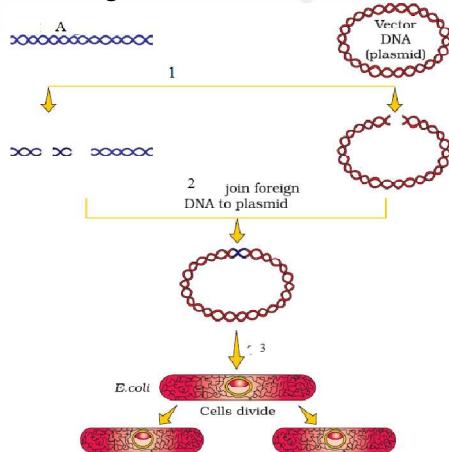
- (d) Identify the organ 'D'.  
 (e) Identify the stage 'E'.



10. Name the organisms used for production of organic acids – citric, acetic, butyric and lactic.  
 11. Name a blood cholesterol inhibiting agent. How does it act?  
 12. How can Bacterium – Bacillus thuringiensis be used as an effective biocontrol agent against butterfly caterpillars?  
 13. Define BOD. What does it measure?  
 14. Why are baculoviruses effective biocontrol agents? State two conditions when they are desirable.  
 15. Three water samples, namely, river water, untreated sewage water and secondary effluent discharged from a sewage treatment plant were subjected to BOD test. The samples were labelled A, B and C, but the laboratory attendant did not note which was which. The BOD values of three samples A, B and C were recorded as 20 mg/L, 8 mg/L and 400 mg/L respectively. Which sample of the water is most polluted?  
 16. Give reasons for the following:  
 (a) Detergent formulations claim to effectively remove oily stains.  
 (b) Bottled fruit juices bought from the market are clearer as compared to those made at home.  
 (c) Microorganisms can help patients who have undergone myocardial infarction leading to heart attack.  
 (d) Microorganisms can help patients who have undergone organ-transplant.  
 (e) Microorganisms can help people with high cholesterol levels.  
 17. In the figure depicting a typical biogas plant, identify 'a', 'b' and 'c'. Describe the sequence of events occurring in a biogas plant.



18. In the given figure  
 (a) Identify A  
 (b) Name the enzymes involved in steps 1 and 2.  
 (c) Name the step numbered as 3  
 (d) Which processes or method is being shown here.



19. (a) Describe the characteristics a cloning vector must possess.  
 (b) Why DNA cannot pass through the cell membrane? Explain. How is a bacterial cell made competent to take up recombinant DNA from the medium?  
 (c) Explain, how do ori, selectable marker and cloning sites facilitate cloning into a vector?
20. A method to prevent infestation of a nematode *Meloidegyne incognitia* on roots of tobacco is silencing the specific mRNA. What is the scientific name of the technique? How is this performed by ds- RNA?
21. A two years old baby is deficient in his immune system since birth. His father was told that this was due to an enzyme deficiency which is crucial for the immune system to function.  
 (a) Name the enzyme  
 (b) The cause of its deficiency  
 (c) The cure of the disease?
22. Why are transgenic animals so called?
23. (a) Expand ELISA.  
 (b) What is its principle?  
 (c) Name a disease for which this technique can be used.
24. (a) What is meant by ADA deficiency?  
 (b) How is gene therapy a solution to this problem?  
 (c) Why is it not a permanent cure?
25. Name the following  
 (a) The human protein used to treat emphysema.  
 (b) First transgenic cow.  
 (c) The vaccine developed using transgenic mice.  
 (d) What is a recombinant DNA vaccine? Give two examples.

### **PHYSICS (042)**

1. A glass lens of refractive index 1.5 is placed in a trough of liquid. What must be the refractive index of the liquid in order to make the lens disappear?  
 A converging lens of refractive index 1.5 is kept in a liquid medium having same refractive index. What would be the focal length of the lens in this medium?
2. How does the power of a convex lens vary, if the incident red light is replaced by violet light?
3. How does the angle of minimum deviation of a glass prism vary, if the incident violet light is replaced with red light?  
 We know that  $\lambda_{\text{red}} > \lambda_{\text{violet}}$ , therefore  $\mu_{\text{red}} < \mu_{\text{violet}}$  and hence  $\delta_{\text{red}} < \delta_{\text{violet}}$ .
4. When incident violet light is replaced with red light, the angle of minimum deviation of a glass decreases.
5. How does the angle of minimum deviation of a glass prism of refractive index 1.5 change, if it is immersed in a liquid of refractive index 1.3?

### **CHEMISTRY (043)**

#### **COMPLETE THE DIFFERENTIATING TESTS IN THE TABLE BELOW**

|    | REAGENTS                                                                   | PRIMARY ALCOHOL | SEC. ALCOHOL                  | TERT. ALCOHOL                 |         |         |
|----|----------------------------------------------------------------------------|-----------------|-------------------------------|-------------------------------|---------|---------|
| 1. | Lucas reagent( conc. HCl and anhyd. ZnCl <sub>2</sub> at room temperature) |                 |                               | Immediate turbidity           |         |         |
|    |                                                                            | PHENOL          | BENZOIC ACID                  | ACETIC ACID                   |         |         |
| 2  | Neutral ferric chloride test                                               |                 |                               | Wine red coloration           |         |         |
| 3. | Azo dye                                                                    |                 | No characteristic observation | No characteristic observation |         |         |
|    |                                                                            | FORMALDE        | ACETALDEHYD                   | BENZALDEHYD                   | ACETONE | ETHANOL |

|     |                                                                    |                |                                |                               |                               |                               |
|-----|--------------------------------------------------------------------|----------------|--------------------------------|-------------------------------|-------------------------------|-------------------------------|
|     |                                                                    | HYDE           | E                              | E                             |                               |                               |
| 4.  | Iodoform test                                                      |                | Yellow ppt.                    | No ppt.                       |                               |                               |
| 5.  | Fehling's test                                                     | Brick red ppt. |                                |                               | No characteristic observation | No characteristic observation |
| 6.  | Tollen's Test                                                      |                |                                |                               | No characteristic observation | No characteristic observation |
|     |                                                                    | FORMIC ACID    | ACETIC ACID                    | BENZOIC ACID                  |                               |                               |
| 7   | Tollen's Test                                                      |                | No characteristic observation  | No characteristic observation |                               |                               |
| 8   | Neutral FeCl <sub>3</sub> test                                     | No observation | Wine red coloration            |                               |                               |                               |
|     |                                                                    | Primary AMINE  | Sec. AMINE                     | Tert. AMINE                   |                               |                               |
| 9.  | Hinsberg's Test (Benzene sulfonyl chloride)                        |                | Product is insoluble in alkali | No direct product formation   |                               |                               |
|     |                                                                    | ANILINE        | Primary AMINE                  | Sec. AMINE                    | Tert. AMINE                   |                               |
| 10. | Carbylamine Test (CHCl <sub>3</sub> + alc. KOH)                    |                | Abnoxious smell of isocyanide  | No characteristic observation |                               |                               |
|     |                                                                    | ANILINE        | ETHYLAMINE                     | PHENOL                        | Alkenes/ Alkynes              |                               |
| 11. | Bromine water                                                      |                |                                |                               | Get decolorised               |                               |
|     |                                                                    | PHENOL         | ETHANOL                        |                               |                               |                               |
| 12. | Conc. HNO <sub>3</sub> /H <sub>2</sub> SO <sub>4</sub> (nitration) |                | No characteristic observation  |                               |                               |                               |
|     |                                                                    |                |                                |                               |                               |                               |

### ACCOUNTANCY (055)

1. Pawan, Jeevan and Madan are partners in a firm. Their capital accounts on 1st April, 2022, stood at Rs 2,00,000, Rs 1,20,000 and Rs 1,60,000 respectively. Each partner withdrew Rs 15,000 during the financial year 2021-22.  
As per the provisions of their partnership deed:  
(a) Interest on capital was to be allowed @ 5% per annum.  
(b) Interest on drawings was to be charged @ 4% per annum.  
(c) Profits and losses were to be shared in the ratio 5:4:1.  
The net profit of Rs 72,000 for the year ended 31st March 2022, was divided equally amongst the partners without providing for the terms of the deed.  
You are required to pass a single adjustment entry to rectify the error (Show workings clearly).
2. Aman and Bunty are partners in a firm. The firm maintains fluctuating capital accounts and the balance of the same as on 31-03-2022 amounted to Rs 1,60,000 and Rs 1,40,000 for Aman and Bunty respectively. Their drawings during the year were Rs 30,000 each.  
As per partnership deed interest on capital @25% p.a. on opening capitals had been provided to them. Calculate opening capitals of partners given that their profits were Rs 90,000. Show your workings clearly. Also pass journal entries for providing interest on partners' capitals.
3. Earth Limited purchased a machinery from Moon Limited and the purchase consideration was paid as follows:  
(a) By issuing 5,000, 11% Debentures of Rs 100 each at a discount of 10%.  
(b) Balance by giving a promissory note of Rs 1,82,000 after 3 months.

Pass necessary journal entries for the purchase of machinery and payment to Moon Limited in the books of Earth Limited.

4. Disha, Laxmi and Archana are partners sharing profits and losses in the ratio of 3:2:1. With effect from 1st April, 2022 they agree to share profits equally. For this purpose, goodwill is to be valued at two year's purchase of the average profit of last 2 years which were as follows:

Year ending on 31st March, 2021 Rs 1,90,000 (Profit) Year ending on 31st March, 2022 Rs 70,000 (Loss) On 1st April, 2021 a Laptop costing Rs 50,000 was purchased and debited to internet expenses account, on which depreciation is to be charged @ 20% p.a by Straight Line Method.

Journalise the transaction along with the working notes.

5. Pass necessary journal entries in the following cases on the dissolution of a partnership firm of partners Rakesh, Gopal, Sudhir and Manish:

- (a) Realization expenses of Rs 5,000 were to borne by Rakesh, a partner. However, it was paid by Gopal.
- (b) Investments costing Rs 25,000 (comprising 1000 shares), had been written off from the books completely. These shares are valued at Rs 20 each and were divided amongst the partners.
- (c) Gopal's loan of Rs 50,000 settled at Rs 48,000.
- (d) Machinery (book value Rs 6,00,000) was given to creditor at a discount of 20%.

6. Bandhan Group Limited issued a prospectus inviting applications for 5,00,000 equity shares of Rs 10 each issued at a premium of 10% payable as:

Rs 3 on Application

Rs 5 on Allotment (including premium) and Rs 3 on call. Applications were received for 6,60,000 shares.

Allotment was made as follows:

- (a) Applicants of 4,00,000 shares were allotted in full.
- (b) Applicants of 2,00,000 shares were allotted 50% on pro rata basis.
- (c) Applicants of 60,000 shares were issued letters of regret.

A shareholder to whom 500 shares were allotted under category (a) paid full amount on shares allotted to him along with allotment money. Another shareholder to whom 1,000 shares were allotted under category

(b) failed to pay the amount due on allotment. His shares were immediately forfeited. These shares were then reissued at Rs 14 per share as Rs 7 paid up. Call has not yet been made. Journalise.

#### BUSINESS STUDIES (054)

1. Match the type of tests in Column I with their meanings in Column II.

| Column I             | Column II                                                      |
|----------------------|----------------------------------------------------------------|
| A. Intelligence Test | (i) Measures an individual's potential for learning new skills |
| B. Aptitude Test     | (ii) Measures the existing skills of an individual             |
| C. Trade Test        | (iii) Measures the level of intelligence of an individual      |
| (a) (iii), (i), (ii) | (b) (i), (ii), (iii)                                           |
| (c) (ii), (i), (iii) | (d) (ii), (iii), (i)                                           |

2. Which of the following is not a function of stock exchange?

- (a) Safety of transaction
- (b) Pricing of securities
- (c) Providing liquidity and marketability to existing securities
- (d) Holding securities in electronic form

3. Safex Bio Science Private Limited, a pharmaceuticals company, has introduced mosquito repellent bands under the brand name 'Jaddu' in the wake of outbreak of dengue in various parts of the country. The product attracted many people from all age groups, especially kids. However, the company failed to provide adequate guidance for the users on the label of the product in terms of time period of the

effectiveness of the repellent band once its seal is opened. Because of this ambiguity, many buyers faced problems.

Identify the consumer right which has been overlooked by the company.

- |                          |                         |
|--------------------------|-------------------------|
| (a) Right to be informed | (b) Right to safety     |
| (c) Right to be heard    | (d) Right to be assured |

4. Statement I: Electronic holdings can be converted into physical certificates with the process of dematerialisation.

Statement II: There is no danger of theft, loss or forgery of share certificates in dematerialisation.  
Choose the correct option from the options given below:

- |                                                   |                                                   |
|---------------------------------------------------|---------------------------------------------------|
| (a) Statement I is true and Statement II is false | (b) Statement II is true and Statement I is false |
| (c) Both the statements are true                  | (d) Both the statements are false                 |

5. Statement I: Management is called an inexact science.

Statement II: Management deals with complex human behaviour, which cannot be determined with accuracy.  
Choose the correct option from the options given below:

- |                                                   |                                                   |
|---------------------------------------------------|---------------------------------------------------|
| (a) Statement I is true and Statement II is false | (b) Statement II is true and Statement I is false |
| (c) Both the statements are true                  | (d) Both the statements are false                 |

6. ‘To get the benefit of the hi-tech consumers who made use of computer more in their lives, TATA Sons even launched a website for e-greetings.’ Which dimension of business environment is reflected here?

- |                           |                               |
|---------------------------|-------------------------------|
| (a) Social environment    | (b) Economic environment      |
| (c) Political environment | (d) Technological environment |

7. “Management principles are not as rigid as principles of pure science.” Which of the following best describes the given statement?

- |                                                                                                                                |                                                                                                                |
|--------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| (a) Principles of management are formed after research in work situations, which are technical in nature.                      | (b) Principles of management contribute towards the development of management both as a science and as an art. |
| (c) Management principles deal with human behaviour and thus, are to be applied creatively given the demands of the situation. | (d) None of these                                                                                              |

8. Consider the following Image :

People’s behaviour is affected by rumours and sometimes may hamper work environment.

Name the communication used by the managers to transmit information so as to know the reactions of his/her subordinates.



- |                            |                              |
|----------------------------|------------------------------|
| (a) Informal communication | (b) Formal communication     |
| (c) Vertical communication | (d) Horizontal communication |

9. ‘Managers at all the levels need to perform the controlling function to keep a check on the activities in their respective areas of operation.’ Which feature of controlling is being referred to?

- |                                    |                                            |
|------------------------------------|--------------------------------------------|
| (a) Controlling is all pervasive   | (b) Controlling is looking back            |
| (c) Controlling is forward looking | (d) Controlling is a goal-oriented process |

10. Assertion (A) Recruitment may be defined as the process of searching for prospective employees and stimulating them to apply for jobs in the organisation.

Reason (R) Objective of recruitment is to create a pool of prospective candidates, for best selection of candidate.

### Alternatives

- Due to this, the company started facing the problem of falling revenues. Their HR manager Mr Revanth advised the management to follow the principle of mental revolution. Is the advice of HR manager appropriate? Elucidate.
18. Rajesh bought a car worth Rs. 17,50,000. After driving it, she found that the AC of the car stopped functioning. She approached the dealer who refused to look into the matter.
- Suggest her suitable authority where she can file a complaint under the Consumer Protection Act, 2019.
  - What procedure will be followed by the concerned authority to redress her grievance?
19. In each of the following cases, identify which principle of Fayol is being violated? Explain them.
- When the manager contracts with his cousin for supply of material, knowing that such materials are defective.
  - When chalks are kept in library and books in office.
  - A worker receiving orders from two bosses.
  - When no department has a separate plan of action.
21. Stock exchange acts as a regulator of the securities market. It creates a continuous market where the securities are bought and sold. It gives investors the chance to disinvest and reinvest. Through this process of disinvestment and reinvestment, savings get channelized into their most productive investment avenues. To ensure that the investing public gets a safe and fair deal in the market, the membership of the stock exchange is well regulated and its dealings are well defined according to the existing legal framework. It also ensures wider share of ownership by regulating new issues, better trading practices and taking effective steps in educating the public about investments.
- Identify and state any three functions performed by the Stock Exchange discussed in the above para.
22. Read the statements given in point (i) and (ii), answer the questions that follows
- Shalvi is engaged in 'transport business' and transports fruits and vegetables to different states.
    - Identify the working capital requirement of Shalvi.
    - Explain any two factors that will affect her fixed capital requirements.
  - 'Delhi very Logistics warehousing services help business firms to reduce their overheads, increase efficiency and cut down distribution time.
    - State whether the working capital requirement of 'Delhi very Logistics' will be high or low.
    - Explain any two factors that will affect its working capital requirement.
23. Nihit approached Thomas Book, a Tour and Travel Company, to inquire about Europe tour packages available during summer vacations. The tour coordinator, Rashmi, mentioned five different packages with different combinations of number of day/night packages. He selected one package of combination of Switzerland and Paris for 6 night/7 days and completed the procedure for the tour by submitting all the necessary documents along with the payment. He also asked about category of hotels (3 star or 4 star), climate of the touring countries, currency of these countries, date of departure, name of the flight, any precaution to be taken, etc.
- Identify and briefly explain the consumer rights which Nihit availed above.
  - Mention any three responsibilities that a consumer should always keep in his mind while purchasing any good or availing service.

### **ECONOMICS (030)**

- Compare the economic growth rates of India, Pakistan, and China over the past two decades. What factors have contributed to their growth differences?
- Examine the economic reforms and policies that have driven economic growth in these countries. How do they differ in their approaches?
- Compare the poverty levels in India, Pakistan, and China. How do government policies and initiatives address poverty in each country?
- Analyze the effectiveness of social safety nets and poverty reduction programs in these countries. What are their impacts on vulnerable populations?

5. Examine the state of education and human development in India, Pakistan, and China. How do literacy rates, access to quality education, and healthcare compare?
6. Discuss the role of education in promoting human development and economic growth in these countries.
7. Examine the foreign policies of India, Pakistan, and China and their impacts on regional and global development.
8. Discuss China's Belt and Road Initiative and its influence on economic development and international relations in South Asia.
9. Examine the composition of the industrial and agricultural sectors in these countries. How have shifts in these sectors impacted their economies?
10. Discuss the role of agriculture and manufacturing in employment and income generation in India, Pakistan, and China.

### **HISTORY (027)**

1. Explain the key features of Bhakti and Sufi movements.
2. Highlight some prominent Bhakti and Sufi saints and their contributions.
3. Discuss the impact of these movements on society, culture, and religion.
4. Provide an overview of the Harappan civilization (bricks).
5. Explore trade and commerce in the ancient world, focusing on beads.
6. Discuss the significance of the study of bones in understanding ancient societies.
7. Connect these elements to archaeological findings and their implications.
8. Analyze the challenges faced and the compromises made during the framing process.

### **POLITICAL SCIENCE (028)**

1. The Soviet System was maintained and annihilated due to its specific nature of governance. Explain
2. Indias policies on environment have helped improve the quality of life of it's citizens in association with its rich flora and fauna since times immemorial. Explain
3. The Janata Party government from 1977-79 lasted and withered away with many lessons for democracy. Examine
4. The Politics of India since 1991 changed dramatically due to pragmatism and the rise of Bharatiya Janta Party in the Union government. Examine

### **GEOGRAPHY (029)**

1. Explain the three main areas of measuring human development.
2. Explain the 'basic needs approach' to human development in the world.
3. The number of pastoral nomads has been decreasing and the areas operated by them shrinking. Why?
4. W.T.O. is often criticized for widening the Gap between developed and developing countries. Examine critically.
5. Do you feel that the recent incidents of farmers' suicides in different states of the country are the result of indebtedness?

### **PSYCHOLOGY (037)**

1. If you get an opportunity to join into group why would you join there explain the fact.
2. Draw a case study mentioning an individual who has been suffering from any of the anxiety disorder and which therapy would be the best for that person to recover. Explain that disorder as well as the therapy.
3. Enumerate a case of a person whose attitude is influenced by media and how will the person change his or her attitude ? Give explanation.

**Note: you have to use A4 size pages for making the assignment.**

### **COMPUTER SCIENCE (083)**

1. Differentiate between Wi-Fi and WiMax in context of wireless communication technologies.
2. Expand the following terms:
 

|          |         |
|----------|---------|
| (a) GPRS | (b) GSM |
| (c) WLL  | (d) PPP |
3. Differentiate between Domain name and URL. Illustrate with the help of suitable example.
4. Evaluate the following expressions:

- (a)  $16 // 3 + 3 ** 3 + 15 / 4 - 9$   
 (b)  $x > y$  or  $y < z$  and not  $x != z$  If  $x, y, z = 25, 16, 9$
5. Rewrite the following code in Python after removing all syntax error(s). Underline each correction done in the code.
- ```
for Name in [Aakash, Sathya, Tarushi]
IF Name[0]= 'S':
print(Name)
```
6. What do you understand by Alternate Keys in a table? Give a suitable example of Alternate Keys from a table containing some meaningful data.
7. Write a function Interchange (num) in Python, which accepts a list num of integers, and interchange the adjacent elements of the list and print the modified list as shown below: (Number of elements in the list is assumed as even).
- Original List:
 $\text{num} = [5, 7, 9, 11, 13, 15]$
 After Rearrangement $\text{num} = [7, 5, 11, 9, 15, 13]$
8. Write a function in Python that displays the words, starting with uppercase letter in a file ‘legend.txt’.
 Example: If the “legend.txt” contents are as follows:
 Diego Maradona, Argentinian soccer legend and celebrated Hand of God scorer dies at 60.
 The output of the function should be:
 Diego Maradona, Argentinian Hand
 God
9. Write a function in Python Popstack (names), where names is a stack implemented by a list of names.
 The function returns the name deleted from the stack.
10. Write the outputs of the SQL queries (i) to (iii) based on the relations Car and Customer given below:

CAR

| Ccode | Cname | Make | Colour | Capacity | Charges |
|-------|---------|---------|--------|----------|---------|
| 201 | Triber | Renault | Yellow | 7 | 1000 |
| 203 | Altroz | Tata | Black | 5 | 1500 |
| 208 | Innova | Toyota | Silver | 8 | 3000 |
| 209 | Harrier | Tata | White | 6 | 2000 |
| 212 | Duster | Renault | Red | 6 | 2500 |
| 217 | Ertiga | Suzuki | Grey | 7 | 2300 |

Customer

| Custcode | Custname | Ccode |
|----------|----------|-------|
| 101 | Gopinath | 201 |
| 102 | Ashok | 203 |
| 103 | Harshini | 209 |
| 104 | Vishnu | 212 |

- (a) Select make, count(*) from Car group by make having count(*)<2;
 (b) Select Cname, Make from Car order by charges desc;
 (c) Select Custname, Cname from Car R, Customer C where R.Ccode=C.Ccode:

11. Write the SQL commands for the following questions (i) to (v) based on the relations Car and Customer given below:

| Car | | | | | |
|-------|---------|---------|--------|----------|---------|
| Ccode | Cname | Make | Colour | Capacity | Charges |
| 201 | Triber | Renault | Yellow | 7 | 1000 |
| 203 | Altroz | Tata | Black | 5 | 1500 |
| 208 | Innova | Toyota | Silver | 8 | 3000 |
| 209 | Harrier | Tata | White | 6 | 2000 |
| 212 | Duster | Renault | Red | 6 | 2500 |
| 217 | Ertiga | Suzuki | Grey | 7 | 2300 |

| Customer | | |
|----------|----------|-------|
| Custcode | Custname | Ccode |
| 101 | Gopinath | 201 |
| 102 | Ashok | 203 |
| 103 | Harshini | 201 |
| 104 | Vishnu | 212 |

- (a) To display the Names and Charges of all the Silver coloured cars.
 (b) To display the non duplicate car codes in the customer table.
 (c) To display the Minimum and Maximum car charges.
 (d) To give a discount of 10% in the car charges for existing customers (who are in the customer table).
 (e) To display Name and Make of cars whose charges is in the range 2000 to 3000 (both inclusive).
12. Find and write the output of the following Python code:
- ```
def Shuffle(str1):
 str2=""
 for i in range(0,len(str1)-1):
 if(str1[i].islower()):
 str2=str2+str1[i].upper() elif str1[i].isupper():
 str2=str2+str1[i].lower() elif str1[i].isdigit():
 str2=str2+'d' else:
 str2=str2+(str1[1-i]) print(str2)
Shuffle('Pre-Board Exam@2023')
```

### INFORMATICS PRACTICES (065)

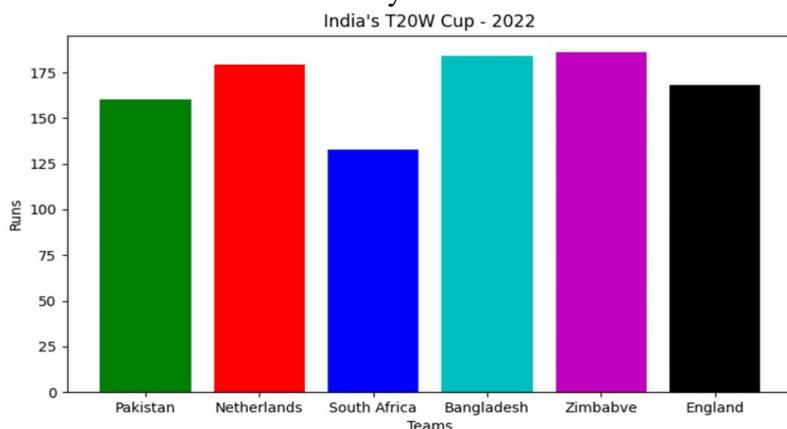
- What do you mean by Pandas? What are three important data structures of pandas?
- What do you mean by data structure?
- Differentiate between NumPy and Pandas.
- Samira wants to install python pandas on her laptop. She is not aware of the prerequisite for the same and commands to install it. Help her to understand her requirements and complete her task.
- Krish wants to store an individual score of players 34,56,78,23 with appropriate data labels. Which Pandas data structure is used for this purpose? Write a short code to store the values with data labels as names of players.
- Lax is confused to understand what is series and how it is helpful in data analysis? Illustrate the answer in short and help him.
- Adnan has been given a task to create an empty series. But he is confused about what it is and how to create it. Suggest to him the way to create it and understand what is empty series?
- Krushn has given the task to create an empty series with default data type float. Write code for the same and display series.

9. What will be the output of the following?
- ```
import pandas as pd
s=pd.Series([[34,56,78],[4,3,2]])
print(s)
```
10. Write a program to create a series objects using a dictionary that stores the number of cities in district of your state.
11. Write a program to create a series object using a dictionary that stores the number of students in each section of class XII.
12. Consider the following DataFrame, DF

| | Rollno | Name | Class | Section | CGPA |
|-----|--------|----------|-------|---------|------|
| St1 | 1 | Aman | IX | E | 8.7 |
| St2 | 2 | Preeti | X | F | 8.9 |
| St3 | 3 | Kartikey | IX | D | 9.2 |
| St4 | 4 | Lakshay | X | A | 9.4 |

Write commands to :

- (a) Write a statement to print the dimensions of given dataframe
 (b) Write a statement to print the number of elements of given dataframe
24. Write a Python code to create a DataFrame from the dictionary given below and write the output also:
 25. Write python code to plot a bar chart for India's runs in T20 World cup as shown below:
 Apply appropriate labels to the chart and x and y axis.



PHYSICAL EDUCATION (048)

- Explain the advantages of physical activities for children with special needs.
- Elaborate the importance of food pre, during and post exercises.
- What should be the role of technical and finance committee while organizing the event.
- What do you understand by the various types of aggression in sports?
- Write in brief the causes and corrective measures of Knock Knees, Bow legs and Flat foot.
- Discuss the Short Term Effects of Exercise on Cardiovascular System.
- Draw the diagram of Dhanurasan correctly and discuss the technique and Contraindications of Dhanurasan.
- Describe the procedure of SAI Khelo India Fitness Test of 9-18+ YEARS.
- Discuss various Factors affecting projectile motion.
- What is bye? Write the procedure of giving bye. Draw a fixture of 22 teams are participating knock out football tournament.

हिन्दी (302)

1. 'शिरीष के फूल' की तर्ज पर हजारी प्रसाद द्विवेदी की अन्य रचनाओं कुट्टज/आम फिर बौरा गए/अशोक के फूल/देवदारु में से किसी एक निबंध को पढ़कर इसका सारांश लिखिए।
2. बादलों से संबंधित किन्हीं पाँच कविताओं का संकलन कर अपनी उत्तर-पुस्तिका में लिखिए।

HINDUSTANI MUSIC (VOCAL) (034)

1. Write the Notation (swaralipi) of your prescribed all Ragas from your syllabus with introduction and Tana.
2. Describe Rupak, Jhaptaal and Dhamaar with Dugun, Tigun and Chaugun laya.

PAINTING (049)

Topic: Abstract Color Study

Create an abstract painting focusing solely on the use of colors and shapes.

Select a color scheme (complementary, analogous, monochromatic, etc.) and experiment with different combinations.

Explore the emotions or feelings each color evokes and use them to guide your composition.

YOGA (841)

1. Explain the Asthma with their cause, sign, Sy Symptoms and Yogic Management.
2. What is Jala Neti? Explain the procedure, Benefits and contraindication.

-----X-----

