Central Agra Public School

Shahdra Check Post, Agra

SESSION : (2020-2021)

WEEKLY ASSIGNMENT-2

CLASS- XII

ENGLISH CORE

Q1. Find out the meanings of the words already highlighted in pink colour.

Q2. Read the Extracts given below and answer the questions that follow:

a) I jumped over the bench and sat down at my desk. Not till then, when I had got a little over my fright, did I see that our teacher had on his beautiful green coat, his frilled shirt, and the little black cap, all embroidered, that he never wore on inspection or prize days. Besides, the whole world seemed so strange and solemn. But, the thing that surprised me the most was to see, on the back benches that were always empty, the village people sitting quietly like ourselves.

(i) Who was 'I'? Also write his teacher's name.
(ii) How was the teacher dressed?
(iii) How did the school seem to be on that day?
(iv) What was the thing that surprised 'I' the most?

b) But he had the courage to hear every lesson to the very last. After the writing, we had a lesson in history, and then the babies chanted their *ba, be bi, bo, bu.* Down there at the back of the room old Hauser had put on his spectacles and, holding his primer in both hands, spelled the letters with them. You could see that he, too, was crying; his voice trembled with emotion, and it was so funny to hear him that we all wanted to laugh and cry. Ah, how well I remember it, that last lesson!

(i) Who was 'he'? What courage is referred to?
(ii) Who was crying? Why was he present in the class?
(iii) Why was the teacher crying?
(iv) Why does 'I 'remember that day's lesson?

SHORT ANSWER TYPE QUESTIONS

Q3. Why was Franz afraid to go to school that day?
Q4. What temptations did Franz overcome to proceed to school that day?
Q5. What were the words that acted as a thunderclap to little Franz?
Q6. Whom does the teacher blame for the neglect of the learning at school and why?
Q7. How does M .Hamel praise the French language?

LONG ANSWER TYPE QUESTIONS

Q8. "We've all a great deal to reproach ourselves with "said M. Hamel. Refer to the context and explain what he wanted to convey to his students?
Q9. Is it possible to carry pride in one's language too far? Do you know what "linguistic chauvinism" means?
Q10. What changes did the order from Berlin cause in the school that day?

PHYSICS

1) How can you charged a metal sphere positively without touching it?
2) Why gold leaf are used in electroscope?
3) If 10^9 electrons moves outer body to another body every second how much time is required to get a total charge of 1 coulomb on the other body?
4) Write down value of permittivity of free space with its SI unit.
5) Write down the definition of electric field intensity with its SI unit.
6) Electric field is vector or scalar quantity if it is vector write down its direction.
7) Draw the electric field lines for negatively charged particle.

8) What do you understand by the electric flux define it with its SI unit, it is vector or scalar quantity?
9) What do you understand by charge distribution, define linear charge density, surface charge density and volume charge density with its si units.
10) What is the force between two small charged spheres having. Charges of 2 × 10^-7 and 3× 10^-7 place 30 cm apart in air?
11) An electric dipole with dipole moment 4 × 10^ -9 C m is aligned at 30 degree with the direction of uniform electric field of magnitude 5 × 10 ^ 4 N/C calculate the magnitude of torque acting on dipole.
12) Is force acting on electric dipole placed in uniform electric field is always zero?
13) Can the torque on electric dipole placed in uniform electric field be zero?
14) Can force on electric dipole placed in in non-uniform electric field the non-zero?
15) What do you understand by the invariance property of electric charge?

CHEMISTRY

Q.1. Why is the vapour pressure of a solution of glucose in water lower than that of water?
Q.2. Define molal depression constant or cryoscopic constant.
Q.3. Define an ideal solution and write one of its characteristics.
Q.4. Give reasons why cooking is faster in pressure cooker than in cooking pan
Q.5. Give reason why red blood cells shrink when placed in saline water but swell in distilled water.
Q.6. why is glycol and water mixture used in car radiators in cold countries
Q.7. Define the following terms:
(i) Abnormal molar mass (ii) van't Hoff factor
Q.8. Derive the relationship between relative lowering of vapour pressure and molar mass of the solute.
Q.9. Discuss biological and industrial importance of osmosis.
Q.10. Why a person suffering from high blood pressure is advised to take minimum quantity of common salt?

BIOLOGY

Q1. How does colostrums provide protection against diseases to new born babies?
Q2. Mention the function of trophoblast in human embryo
Q3. Mention the differences between spermiogenesis and spermiation.
Q4. Write the function of nucleus in human sperm.
Q5. Differentiate between major structural changes in human ovary during follicular and luteal phase of menstrual cycle.
Q6. A fertilized egg is the blue print of future development .Explain
Q7. Placenta acts as a endocrine tissue .Justify
Q8. Corpus luteum in pregnancy has a long life. However if fertilization does not take place it remains active for 10-12 days. Why?
Q9. a) In which part of human female reproductive system do the following events take place
1) Release of first polar body
2) Release of second polar body
3) Fertilization
4) Implantation
b) From where do the signals of parturition originate and what does maternal pituatory release for uterine contraction for child birth.
Q10. Briefly describes the hormonal control on gametogenesis in males.
Q11. Write the function of Seminal vesicle and acrosome of human sperm
Q12. Draw the following diagrams related to human reproduction and label them
1) The zygote after first cleavage division
2) Morula stage
3) Blastocyst stage (sectional view)

Q13. A women has conceived and implantation has occurred.Explain the sequence of changes upto parturition which takes place within her body.

Q14. (a) When and how does placenta develop in human female?
(b) How is the placenta connected to the embryo?
(c) Placenta acts an endocrine gland. Explain.

Q15. Explain the role of pituatory and ovarion hormones in menstrual cycle in human female

COMPUTER SCIENCE & INFORMATICS PRACTICES

1) What are data types? How are they important?
2) Difference between a) plain integer and long integer b) List and Tuple
3) How many String types does python support? How are they different from one another?
4) What are immutable and mutable types? List immutable and mutable types of python.
5) What are augmented assignment operators? How are they useful?
6) Difference between (555/222) **2 and (555.0/222) **2.
7) Evaluate and justify : 22 / 17 = 37 / 47 + 88 / 83 8)
Evaluate :22.0 / 7.0 – 22 / 7
9) What will be output produce by following code?

```
A = 5
b = -3
c = 25
d = -10
a + b + c > a + c – b * d
str ( a + b + c > a + c – b * d ) == str ( true )
```

10) What will be the output of following code? Explain reason behind output of every line.

```
5 < 5 or 10
5<10 or 5
5 (10 or 5)
5 (5 or 10)
```

MATHEMATICS

1. Find A, if $\begin{bmatrix}4\\1\\3\end{bmatrix} A = \begin{bmatrix}4 & 8 & 4\\1 & 2 & 1\\3 & 6 & 3\end{bmatrix}$

2. If $A = \begin{bmatrix}3 & 4\\1 & 1\\2 & 0\end{bmatrix}$ and $B = \begin{bmatrix}2 & 1 & 2\\1 & 2 & 4\end{bmatrix}$, then verify $(BA)^2 \neq B^2A^2$.

3. If possible, find BA and AB, where $A = \begin{bmatrix}2 & 1 & 2\\1 & 2 & 4\end{bmatrix}$ and $B = \begin{bmatrix}4 & 1\\2 & 3\\1 & 2\end{bmatrix}$.

4. Show by an example that for $A \neq O, B \neq O, AB = O$.

5. Given $A=\begin{bmatrix}2 & 4 & 0\\ 3 & 9 & 6\end{bmatrix}$ and $B=\begin{bmatrix}1 & 4\\ 2 & 8\\ 1 & 3\end{bmatrix}$. Is $(AB)' = B'A'$?

6. Solve for x and y: $x\begin{bmatrix}2\\ 1\end{bmatrix}+y\begin{bmatrix}3\\ 5\end{bmatrix}+\begin{bmatrix}-8\\ -11\end{bmatrix}=0$

7. If X and Y are 2×2 matrices, then solve the following matrix equations for X and Y: $2X+3Y=\begin{bmatrix}2 & 3\\ 4 & 0\end{bmatrix}$, $3X+2Y=\begin{bmatrix}2 & 2\\ 1 & 5\end{bmatrix}$.

8. If $A=[3 \quad 5]$, $B=[7 \quad 3]$, then find a non-zero matrix C such that AC = BC.

9. Give an example of matrices A, B and C such that AB = AC, where A is non- zero matrix, but B ≠ C.

10. If $A=\begin{bmatrix}1 & 2\\ 2 & 1\end{bmatrix}$, $B=\begin{bmatrix}2 & 3\\ 3 & 4\end{bmatrix}$ and $C=\begin{bmatrix}1 & 0\\ 1 & 0\end{bmatrix}$, verify :

(i) (AB) C = A (BC) (ii) A (B + C) = AB + AC.

11. If $P=\begin{bmatrix}x & 0 & 0\\ 0 & y & 0\\ 0 & 0 & z\end{bmatrix}$ and $Q=\begin{bmatrix}a & 0 & 0\\ 0 & b & 0\\ 0 & 0 & c\end{bmatrix}$, prove that

$$PQ=\begin{bmatrix}xa & 0 & 0\\ 0 & yb & 0\\ 0 & 0 & zc\end{bmatrix}=QP.$$

12. If: $[2 \quad 1 \quad 3]\begin{bmatrix}-1 & 0 & -1\\ -1 & 1 & 0\\ 0 & 1 & 1\end{bmatrix}\begin{bmatrix}1\\ 0\\ -1\end{bmatrix}=A$, find A.

Long Answer (L.A.)

13. If AB = BA for any two sqaure matrices, prove by mathematical induction that $(AB)^n = A^n B^n$.

Objective Type Questions

Choose the correct answer from the given four options in each of the Exercises 53 to 67.

14. If A and B are two matrices of the order $3 \times m$ and $3 \times n$, respectively, and $m = n$, then the order of matrix $(5A - 2B)$ is

(A) $m \times 3$ (B) 3×3 (C) $m \times n$ (D) $3 \times n$

15. If $A = \begin{bmatrix} 0 & 1 \\ 1 & 0 \end{bmatrix}$, then A^2 is equal to:

(A) $\begin{bmatrix} 0 & 1 \\ 1 & 0 \end{bmatrix}$ (B) $\begin{bmatrix} 1 & 0 \\ 1 & 0 \end{bmatrix}$

(C) $\begin{bmatrix} 0 & 1 \\ 0 & 1 \end{bmatrix}$ (D) $\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$

16. If matrix $A = \lfloor a_{ij} \rfloor_{2\times 2}$ where $a_{ij} = 1$ if $i \neq j$

$= 0$ if $i = j$, then A^2 is equal to:

(A) I (B) A (C) 0 (D) None of these

17. The matrix $\begin{bmatrix} 1 & 0 & 0 \\ 0 & 2 & 0 \\ 0 & 0 & 4 \end{bmatrix}$ is a

(A) identity matrix (B) symmetric matrix

(C) skew symmetric matrix (D) none of these

18. The matrix $\begin{bmatrix} 0 & 5 & 8 \\ 5 & 0 & 12 \\ 8 & 12 & 0 \end{bmatrix}$ is a

(A) diagonal matrix (B) symmetric matrix

(C) skew symmetric matrix (D) scalar matrix

Fill in the blanks in each of the Exercises 68–81.

19. Matrix multiplication is _____ over addition.

20. If A is a symmetric matrix, then A^3 is a _____ matrix.

21. If A is a skew symmetric matrix, then A^2 is a _____.

22. If A and B are square matrices of the same order, then

(i) $(AB)' =$ _____.

(ii) $(kA)' =$ _____. (k is any scalar)

(iii) $[k\ (A - B)]' =$ _____.

23. If A is skew symmetric, then kA is a _____. (k is any scalar)

State Exercises 82 to 101 which of the following statements are **True** or **False**

24. Matrix multiplication is commutative.

25. A square matrix where every element is unity is called an identity matrix.