DAV PUBLIC SCHOOLS, ODISHA ZONE

PERIODIC ASSESSMENT – III, 2023-24

- Please check that this question paper contains **03** printed pages.
- Check that this question paper contains **17** questions.
- Write down the Serial Number of the question in the left side of the margin before attempting it.

CLASS: VIII
SUBJECT: MATHEMATICS

Time Allowed: 1 Hour 30 Minutes **Maximum Marks: 40**

General Instructions:

1. The question paper consists of five sections:
   - Section I: Question No.1 to 6 are of 1 mark each. (5 MCQ Type and 1 Assertion Reasoning type question)
   - Section II: Question No. 7 is of Case Based Question. Each case study has case-based sub-parts: Two of them are MCQ type (1 mark each) and the other subpart is a short answer type (2 marks) having internal choice.
   - Section III: Question No.8 to 11 are Short Answer Type questions of 2 marks each.
   - Section IV: Question No.12 to 15 are Short Answer Type questions of 3 marks each.
   - Section V: Question No.16 & 17 are Long Answer Type questions of 5 marks each.
2. All questions are compulsory. However, internal choices have been given in some questions.

SECTION-I

1. The value of $\left[\left\{(1296)^{-\frac{1}{2}}\right\}^{-\frac{1}{4}}\right]^2$ is

(a) 4 (b) 6 (c) 8 (d) 12

2. Rayn wants to do a one-year deposit. He should opt for -

(a) a simple interest of 20 %
(b) a compound interest of 20% compounded quarterly
(c) a compound interest of 20% compounded half yearly
(d) a compound interest of 20% compounded annually

3. The value of x for which the expression $3x - 4$ and $2x + 1$ becomes equal is

(a) -3 (b) 0 (c) 5 (d) 1

4. The polynomial which when divided by $(-x^2 + x - 1)$ gives a quotient $(x - 2)$ and remainder 3, is

$(a) x^3 - 3x^2 + 3x - 5$ $(b) - x^3 - 3x^2 - 3x + 5$

$(c) - x^3 + 3x^2 - 3x + 5$ $(d) x^3 - 3x^2 - 3x - 5$

5. A sum of Rs 100 at 4% p.a. for 6 months compounded quarterly amounts to:

(a) Rs 102.01 (b)Rs 101.02 (c)Rs110.01 (d)Rs 110.10

Direction:-In question number 6, a statement of assertion(A) is followed by statement of reason(R).

Choose the correct option out of the following:

(a) Both assertion(A) and reason(R) are true and reason(R) is the correct explanation of Assertion(A)

(b) Both assertion(A) and reason(R) are true and reason(R) is not the correct explanation of Assertion(A)

(c) Assertion(A) is true but the Reason(R) is false

(d) Assertion(A) is false and Reason(R) is true

6. Assertion (A): $\mathbf{15}x^{\mathbf{3}} - \mathbf{4}x^{\mathbf{5}} + \mathbf{7}x^{\mathbf{9}}$ is a polynomial of degree $\mathbf{3}$.

Reason(R): The highest power of x in the polynomial $p(x)$ is the degree of the polynomial.

SECTION –II

CASE BASED QUESTIONS

7. During Dusshera, Raman, a shopkeeper offered 50% discount on the goods sold. He sold printed T-shirts and plain T-shirts at his shop. He sold each printed T-shirt for ₹350 and each plain T-shirt for ₹230. On a particular day, he sold a total of 50 T-shirts for ₹14260.

Based on the above information, answer the following questions:

(i) Identify the correct equation for the above given situation.

$(a)\ 350x + (50 + x)230 = 14260$ $(b) 230x + (50 + x)350 = 14260$

$(c)\ 350x + (50 - x)230 = 14260$ $(d)\ 350x = (50 + x) - 14260$

(ii) Find the total cost of printed T-shirts.

OR

Find the total cost of plain T-shirts.

(iii) Find the kind of shirt that was sold more.

(a) Printed T-shirts

(b) Plain T-shirts

(c) Number of shirts sold in both the cases is same

(d) None of these

SECTION-III

8. Find x if $2^x + 2^x + 2^x = 192$.

9. Find the positive value of x in the given equation.

$$\frac{3-x^2}{8+x^2} = \frac{-3}{4}$$

10. A sum becomes 27 times in 3 years compounded annually at a certain rate of interest. Calculate annual rate interest.

OR

In how many years, will Rs.8,000 amount to Rs.9,261 at 5% per annum compounded annually ?

11. Solve: $64^{\frac{1}{2}}\left(64^{\frac{1}{2}} + 5^0\right)$

SECTION-IV

12. Using long division method, show that $(y-2)$ is a factor of $(y^3 - 8)$.

13. Two years ago, father was three times as old as his son and two years hence, twice his age will be equal to five times of his son. Find the present age of the son.

OR

The sum of the digits of a two-digit number is 12. The number obtained by interchanging the digits exceeds the original number by 54. Find the original number.

14. If $4^x - 4^{x-1} = 24$, then find the value of x.

15. The value of a refrigerator which was purchased two years ago, depreciates at 12% per annum. If its present value is Rs. 9680, for how much was it purchased?

SECTION-V

16. The difference between the compound interest and the simple interest on a certain sum of money at 15% p.a. for three years is Rs.283.50. Find the sum.

OR

Mahesh borrowed a certain sum for two years at simple interest from Bhupesh. Mahesh lent this sum to Bikash at the same rate for two years at compound interest. At the end of two years, Mahesh received Rs. 410 as compound interest but paid Rs. 400 as simple interest. Find the sum and rate of interest.

17. Find the difference between the quotient and the remainder when $y^3 + 6 - 6y^2 + 11y$ is divided by $(y+1)$.

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