BURARI PUBLIC SCHOOL

...a venture with UNIQUE

PERIODIC TEST -II (2026-27)

CLASS: X

SUBJECT- MATHEMATICS Date___/___/_____

Time:1hour 30min **M.M. : 40**

Name: ……..... Roll No..…….... T. sign.....

GENERAL INSTRUCTIONS:

- **This question paper has 5 sections.**
- **In section A, Question no. 1- 8 are MCQs and Question no. 9 -10 are Assertion – Reason based Question of 1 mark each.**
- **In Section B, Question no. 11-13 are very short answer (VSA) type questions, carrying 2 marks each.**
- **In Section C, Question no. 14-16are short answer (SA) type questions, carrying 3 marks each.**
- **In Section D, Question no. 17-18 are long answer (LA) type questions, carrying 4marks each.**
- **In Section E, Question no. 19 is case based study question, carrying 3 marks.**

SECTION – A

1. **If means and Median of given set of observations are 10 and 11 respectively, then the value of mode is :**

   a) 10.5

   b) 8

   c) 13

   d) 21

2. **One of the zeroes of polynomial p(X) = kx^2 -9x +3 is (-3/2). Then the value of k is :**

   a) 22/3

   b) -14/3

   c) 14/3

   d) -22/3

3. If α , β are the zeroes of the polynomial $2x^2 + 5x + 1$. The value of $\left(\frac{1}{\alpha}+\frac{1}{\beta}\right) is$:

   a) -5/4

   b) 5

   c) 5/4

   d) -5

4. **Which of the following cannot be the probability of an event ?**

   a) 0.7

   b) 2/3

c) -1.5

d) 15%

5. **One alphabet is chosen from the word MATHEMATICS. Find the probability of getting a vowel is :**

   a) 6/11

   b) 5/11

   c) 3/11

   d) 4/11

6. **If HCF (X, 20) = 2 and LCM (X, 20) = 60, then the value of X is :**

   a) 3

   b) 6

   c) 20

   d) 10

7. **The cumulative frequency for calculating median is obtained by adding the frequencies of all the :**

   a) Classes up to the median class.

   b) Classes following the median class

   c) Classes preceding the median class

   d) All classes

8. **If $X = ab^3$ and $Y = a^3b$, where a and b are prime numbers, then [HCF (X,Y) – LCM (X, Y)] is equal to :**

   a) $1- a^3b^3$

   b) ab (1-ab)

   c) $ab – a^4b^4$

   d) ab(1- ab) (1+ ab)

9. **Assertion (A) : Median marks of students in a class test is 16. It means half of the class got marks less than 16.**

   Reason (R) : Median divides the distribution in two equal parts.

   a) Assertion and reason both are true and reason is correct explanation of assertion.

   b) Assertion and reason both are true but reason is not the correct explanation of assertion.

   c) Assertion is true and reason is false.

   d) Assertion is false and reason is true.

10. Assertion (A) : If E is an event that P(E) = $\frac{1}{999}$, $then\ P(\ not\ E) = 0.001$.

Reason (R) : P(E) + P (Not E) = 1.

a) Assertion and reason both are true and reason is correct explanation of assertion.

b) Assertion and reason both are true but reason is not the correct explanation of assertion.

c) Assertion is true and reason is false.

d) Assertion is false and reason is true.

SECTION – B

11. A die is thrown twice. What is the probability that (I) difference between two numbers obtained is 3? (II) Sum of the numbers obtained is 8?

12. Find the zeroes of the polynomial p(X) = 6X² +13X -5 and verify the relationship between its zeroes and the coefficients.

13. Explain why 7 × 6 × 5 × 4 × 3 × 2 × 1 + 5 is a composite number.

SECTION – C

14. The mean of the following data is 54, find the value of P.

Class	0 – 20	20 – 40	40 – 60	60 – 80	80 – 100
Frequency	7	P	10	9	13

15. Prove that √ 5 is irrational number.

16. If one zeroes of quadratic polynomial f(x) = 4x²– 8kx + 8x – 9 is negative of the other, Then find zeroes of kx²+3kx +2.

– D

17. Find mean , mode and median of the following data :

Class	20 – 25	25 -30	30 -35	35 -40	40 -45	45 -50
Frequency	9	8	11	13	4	5

18. If α, β are the zeroes of the polynomial p(x) = x² -5x +6, then find:

(I) $\frac{1}{\alpha}$ + $(1/\beta)$

(II) α² + β²

SECTION – E

19. A gardener has 108 marigold and 144 rose plants. He wants to plant them in rows such that each row contains the same number of plants of only one type and uses maximum possible number of plants in each row.

Questions: (i) What is the maximum number of plants he can plant in one row? **(2 marks)**

(ii) How many rows of marigold and rose plants will be made? **(2 marks)**

(iii) Which mathematical concept is applied here? **(1 mark)**