Exam Paper

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Test / Exam Name: MCQ 5 Chapter tests
Student Name: ----------

Standard: 10TH
Section: ----------

Subject: MATHEMATICS
Roll No.: ----------

Questions: 60	Time: 60 Mins	Marks: 60

Instructions

1. FREE ANSWERS AVAILABLE IN MY WEBSITE NAME - RAVI TEST PAPERS .

Q1. In an A.P. if a = 3.5, d = 0 and n = 101, then a_n = **1 Marks**

A. 0 B. 103.5 C. 3.5 D. 1

Q2. For what value of k do the equations kx - 2y = 3 and 3x + y = 5 represent two lines intersecting at a unique point? **1 Marks**

A. k = 3
B. k = -3
C. k = 6
D. All real values except -6

Q3. **Directions:** In the following questions, the Assertions (A) and Reason(s) (R) have been put forward. Read both the statements carefully and choose the correct alternative from the following: **1 Marks**

Assertion: Whole no. are known as non negative integers and it does not include any fractional or decimal part.

Reason: Set of whole numbers are {-1, -2, -3_____}.

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 but reason (R) is not the correct explanation of assertion (A).
C. Assertion (A) is true but reason (R) is false.
D. Assertion (A) is false but reason (R) is true.

Q4. From your pocket money, you save Re. 1 on the first day, Rs. 2 on the second day, Rs. 3 on the third day and so on. The amount of money saved by you in the month of May 2013 is: **1 Marks**

A. Rs. 1000 B. Rs. 500 C. Rs. 496 D. Rs. 498

Q5. **Directions:** In the following questions, the Assertions (A) and Reason(s) (R) have been put forward. Read both the statements carefully and choose the correct alternative from the following **1 Marks**

Assertion: The equation $x^2 + (2m + 1)x + (2n + 1) = 0$, where m and n are integers, cannot have any rational roots.

Reason: The quantity $(2m + 1)^2 - 4(2n + 1)$, where $m, n \in I$, can never be a perfect square.

A. Both Assertion and Reason are correct and Reason is the correct explanation for Assertion.
B. Both Assertion and Reason are correct but Reason is not the correct explanation for Assertion.
C. Assertion is correct but Reason is incorrect.
D. Assertion is incorrect but Reason is correct.

Q6. **Directions:** In the following questions, the Assertions (A) and Reason(s) (R) have been put forward. Read both the statements carefully and choose the correct alternative from the following: **1 Marks**

Assertion: The no. which are exactly divisible by 2 are called even no.

Reason: Even no. can be positive or negative integers.

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 but reason (R) is not the correct explanation of assertion (A).
C. Assertion (A) is true but reason (R) is false.
D. Assertion (A) is false but reason (R) is true.

Q7. The prime factors of 196 are **1 Marks**

A. 2 × 7 B. 22 × 7 C. 2 × 72 D. 22 × 72

Q8. Choose the correct answer from the given four options: **1 Marks**

In the first term of an AP is -5 and the common difference is 2, then the sum of the first 6 terms is:

A. 0 B. 5 C. 6 D. 15

Q9. The area of the triangle formed by the line $\frac{x}{a} + \frac{y}{b} = 1$ with the co-ordinate axis is: **1 Marks**

A. 2ab sq.units
B. ab sq.units
C. $\frac{1}{4}$ab sq.units
D. $\frac{1}{2}$ab sq.units

Q10. Mark the correct alternative in the following: **1 Marks**

The 9^{th} term of an A.P. is 449 and 449^{th} term is 9. The term which is equal to zero is:

A. 501th B. 502th C. 508th D. None of these.

Q11. For what value of k, do the equations kx - 2y = 3 and 3x + y = 5 represent two lines intersecting at a unique point? **1 Marks**

A. k = 3
B. all real values except -6
C. k = 6
D. k = -3

Q12. If α, β are the zeros of kx^2 - 2x + 3k such that $\alpha + \beta = \alpha\beta$, then k = ? **1 Marks**

A. $\frac{1}{3}$
B. $\frac{-1}{3}$
C. $\frac{2}{3}$
D. $\frac{-2}{3}$

Q13. If $ax^2 + bx + c = 0$ has equal roots, then c is equal to: **1 Marks**

A. $-\frac{b^2}{2a}$
B. $\frac{b}{2a}$
C. $-\frac{b^2}{4a}$
D. $\frac{b^2}{4a}$

Q14. If the system 6x - 2y = 3, kx - y = 2 has a unique solution, then: **1 Marks**

A. $k \neq 4$ B. k = 4 C. $k \neq 3$ D. k = 3

Q15. If α and β are zeros of $x^2 + 5x + 8$, then the value of $(\alpha + \beta)$ is: **1 Marks**

A. 8 B. 5 C. -5 D. -8

Q16. The sum of three terms of an A.P. is 72, then its middle term is: **1 Marks**

A. 36 B. 18 C. 24 D. 20

Q17. Ritu can row downstream 20km in 2 hours, and upstream 4km in 2 hours. Her speed of rowing in still water and the speed of the current is: **1 Marks**

A. 6km/ hr and 3km/ hr
B. 7km/ hr and 4km/ hr
C. 6km/ hr and 4km/ hr
D. 10km/ hr and 6km/ hr

Q18. ..... is called the Discriminant of the quadratic equation $ax^2 + bx + c = 0$: **1 Marks**

A. a2 - 4bc B. b2 - 4ac C. c2 - 4ab D. None of these

Q19. Which of the following is not a polynomial? **1 Marks**

A. $\sqrt{3}x^2 - 2\sqrt{3}x + 5$
B. $9x^2 - 4x + \sqrt{2}$
C. $\frac{3}{2}x^3 + 6x^2 - \frac{1}{\sqrt{2}}x - 8$
D. $x + \frac{3}{x}$

Q20. Choose the correct answer from the given four options in the following questions: **1 Marks**

Which of the following equations has the sum of its roots as 3?

A. $2x^2 - 3x + 6 = 0$.
B. $-x^2 + 3x - 3 = 0$.
C. $\sqrt{2}x^2 - \frac{3}{\sqrt{2}}x + 1 = 0$.
D. $3x^2 - 3x + 3 = 0$

Q21. If the equation x^2 - ax + 1 = 0 has two distinct roots, then: **1 Marks**

A. |a| = 2 B. |a| < 2 C. |a| >2 D. None of these.

Q22. **Directions:** In the following questions, the Assertions (A) and Reason(s) (R) have been put forward. Read both the statements carefully and choose the correct alternative from the following: **1 Marks**

Assertion: $(2x - 1)^2 - 4x^2 + 5 = 0$ is not a quadratic equation.

Reason: An equation of the form $ax^2 + bx + c = 0$, $a \neq 0$, where a, b, $c \in R$ is called a quadratic equation.

A. If both Assertion and Reason are correct and Reason is the correct explanation of Assertion.
B. If both Assertion and Reason are correct, but Reason is not the correct explanation of Assertion.
C. If Assertion is correct but Reason is incorrect.
D. If Assertion is incorrect but Reason is correct.

Q23. If d is the HCF of 56 and 72, the values of x, y satisfying $d = 56x + 72y$: **1 Marks**

A. x = -3, y = 4 B. x = 4, y = -3 C. x = 3, y = -4 D. x = -4, y = 3

Q24. If the sum of the zeros of the polynomial $f(x) = 2x^3 - 3kx^2 + 4x - 5$ is 6, then the value of k is: **1 Marks**

A. 2 B. 4 C. -2 D. -4

Q25. If a polynomial of degree five is divided by a quadratic polynomial, then the degree of the quotient polynomial is: **1 Marks**

A. 4 B. 2 C. 3 D. 1

Q26. **Directions:** In the following questions, the Assertions (A) and Reason(s) (R) have been put forward. Read both the statements carefully and choose the correct alternative from the following: **1 Marks**

Assertion: $a_n - a_{n-1}$ is not independent of n then the given sequence is an AP.

Reason: Common difference $d = a_n - a_{n-1}$ is constant or independent of n.

A. Both assertion (A) and reason (R) are true and reason (R) isthe correct explanation of assertion (A).
B. Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).
C. Assertion (A) is true but reason (R) is false.
D. Assertion (A) is false but reason (R) is true

Q27. Choose the correct answer from the given four options: **1 Marks**

For what value of k, do the equations $3x - y + 8 = 0$ and $6x - ky = -16$ represent coincident lines?

A. $\frac{1}{2}$ B. $-\frac{1}{2}$ C. 2 D. −2

Q28. The total number of factors of a prime number is: **1 Marks**

A. 1 B. 0 C. 2 D. 3

Q29. If $(x + 1)$ is a factor of $2x^3 + ax^2 + 2bx + 1$, then the values of 'a' and 'b', given that $2a - 3b = 4$ are: **1 Marks**

A. a = 5 and b = 2
B. a = -5 and b = 2
C. a = 5 and b = -2
D. a = -5 and b = -2

Q30. **Directions:** In the following questions, the Assertions (A) and Reason(s) (R) have been put forward. Read both the statements carefully and choose the correct alternative from the following: **1 Marks**

Assertion: A polynomial of degree five is divided by a quadratic polynomial. If it leaves a remainder, then the degree of remainder is 1 or 0.

Reason: Degree of remainder is always less than divisor.

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 but reason (R) is not the correct explanation of assertion (A).
C. Assertion (A) is true but reason (R) is false.
D. Assertion (A) is false but reason (R) is true.

Q31. If x = 1 is a common root of the equations $ax^2 + ax + 3 = 0$ and $x^2 + x + b = 0$, then ab = **1 Marks**

A. 6 B. 3 C. -3 D. 3.5

Q32. The 10th term of an A.P. 2, 7, 12, ... is: **1 Marks**

A. 49 B. 50 C. 48 D. 47

Q33. Determine graphically the co-ordinates of the vertices of the triangle, the equations of whose sides are: y = x, 3y = x, x + y = 8 (1): **1 Marks**

A. 13sq. units B. 21sq. units C. 11sq. units D. 12sq. units

Q34. The first three terms of an AP respectively are 3y - 1, 3y + 5 and 5y + 1. Then y equals: **1 Marks**

A. -3 B. 4 C. 5 D. 2

Q35. Mark the correct alternative in the following: **1 Marks**

If the sum of n terms of an A.P. is $3n^2 + 5n$ then which of its terms is 164?

A. 26th B. 27th C. 28th D. None of these.

Q36. Every prime number has exactly _____ factors. **1 Marks**

A. more than 4 B. 3 C. 4 D. 2

Q37. The exponent of 3 in the prime factorization of 864 is: **1 Marks**

A. 2 B. 3 C. 4 D. 8

Q38. Mark the correct alternative in the following: **1 Marks**

If four numbers in A.P. are such that their sum is 50 and the greatest number is 4 times, the least, then the numbers are:

A. 5, 10, 15, 20 B. 4, 101, 16, 22 C. 3, 7, 11, 15 D. None of these.

Q39. Which term of the AP 21, 42, 63, 84, ... is the 210? **1 Marks**

A. 9th B. 10th C. 11th D. 12th

Q40. **Directions:** In the following questions, the Assertions (A) and Reason(s) (R) have been put forward. Read both the statements carefully and choose the correct alternative from the following: **1 Marks**

Assertion: If a > 0 be a real no. p, and q then $a^p . a^q = a^{p+q}$.

Reason: $17^2 . 17^5 = 17^3$.

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 but reason (R) is not the correct explanation of assertion (A).
C. Assertion (A) is true but reason (R) is false.
D. Assertion (A) is false but reason (R) is true.

Q41. Two tankers contain 850 litres and 680 litres of petrol. The maximum capacity of a container which can measure the petrol of each tanker in exact number of times is: **1 Marks**

A. 200 litres B. 180 litres C. 170 litres D. 190 litres

Q42. Which of the following numbers have the non-terminating repeating decimal expansion? **1 Marks**

A. $\frac{77}{210}$
B. $\frac{6}{15}$
C. $\frac{21}{280}$
D. $\frac{117}{6^2 \times 5^3}$

Q43. The smallest number by which $\sqrt{27}$ should be multiplied so as to get a rational number is: **1 Marks**

A. $\sqrt{27}$ B. $3\sqrt{3}$ C. $\sqrt{3}$ D. 3

Q44. The pair of equations x + 2y + 5 = 0 and -3x - 6y + 1 = 0 have: **1 Marks**

A. A unique solution
B. Exactly two solutions
C. Infinitely many solutions
D. No solution

Q45. Zeros of $p(x) = x^2 - 2x - 3$ are: **1 Marks**

A. 1, -3 B. 3, -1 C. -3, -1 D. 1, 3

Q46. A quadratic equation whose one root is 3 is: **1 Marks**

A. x2 - 5x - 6 = 0
B. x2 - 6x - 6 = 0
C. x2 - 5x + 6 = 0
D. x2 + 6x - 5 = 0

Q47. If the zeroes of the quadratic polynomial $x^2 + (a + 1) x + b$ are 2 and -3, then: **1 Marks**

A. a = 2, b = –6 B. a = -7, b = -1 C. a = 0, b = -6 D. a = 5, b = -1

Q48. $4x^2 - 20x + 25 = 0$ have: **1 Marks**

A. Real roots
B. No Real roots
C. Real and Equal roots
D. Real and Distinct roots

Q49. **Directions:** In the following questions, the Assertions (A) and Reason(s) (R) have been put forward. Read both the statements carefully and choose the correct alternative from the following: **1 Marks**
Assertion: A polynomial having variable with two constant value is called constant polynomial
Reason: A constant polynomial has highest degree is 2.

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 but reason (R) is not the correct explanation of assertion (A).
C. Assertion (A) is true but reason (R) is false.
D. Assertion (A) is false but reason (R) is true.

Q50. The perimeter of a rectangle is 82m and its area is $400m^2$. The breadth of the rectangle is: **1 Marks**

A. 25m B. 20m C. 16m D. 9m

Q51. **Directions:** In the following questions, the Assertions (A) and Reason(s) (R) have been put forward. Read both the statements carefully and choose the correct alternative from the following: **1 Marks**
Assertion: The graph of a quadratic polynomial P(x) intersects the x - axis at two points.
Reason: The graph of a quadratic polynomial is a parabola.

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 but reason (R) is not the correct explanation of assertion (A).
C. Assertion (A) is true but reason (R) is false.
D. Assertion (A) is false but reason (R) is true.

Q52. A polynomial of degree n has: **1 Marks**

A. One zero B. At least n zeroes C. At most n zeroes D. N zeroes

Q53. The roots of a quadratic equation $x^2 - 4px + 4p^2 - q^2 = 0$ are: **1 Marks**

A. 2p + q, 2p + q
B. p + 2q, p - 2q
C. 2p - q, 2p - q
D. 2p + q, 2p - q

Q54. If one zero of the quadratic polynomial $x^2 + 3x + k$ is 2, then the value of 'k' is: **1 Marks**

A. 10 B. -5 C. -10 D. 5

Q55. **Directions:** In the following questions, the Assertions (A) and Reason(s) (R) have been put forward. Read both the statements carefully and choose the correct alternative from the following: **1 Marks**
Assertion: The common difference of the A.P. 19, 18, 17, ... is 1.
Reason: Let a_1, d_2, a_3, a_4, ... is an A.P.
Then, common difference of this A.P. will be
the difference between any two consecutive terms,
i.e., common difference (d) = $a_2 - a_1$ or $a_3 - d_2$ or $a_1 - a_3$ and so on.

A. Assertion and Reason both are correct statements and Reason is the correct explanation of Assertion.
B. Assertion and Reason both are correct statements but Reason is not the correct explanation of Assertion.
C. Assertion is correct statement but Reason is wrong siatement.
D. Assertion is wrong statement but Reason is correct statement.

Q56. **Directions:** In the following questions, the Assertions (A) and Reason(s) (R) have been put forward. Read both the statements carefully and choose the correct alternative from the following: **1 Marks**
Assertion: HCF of consugative even no. is always 3.
Reason: HCF of 22 and 24 is 3.

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 but reason (R) is not the correct explanation of assertion (A).
C. Assertion (A) is true but reason (R) is false.
D. Assertion (A) is false but reason (R) is true.

Q57. The quadratic polynomial, the sum of whose zeroes is -5 and their product is 6, is: **1 Marks**

A. x2 + 5x + 6. B. x2 - 5x + 6. C. x2 - 5x - 6. D. -x2 + 5x + 6.

Q58. Choose the correct answer from the given four options: **1 Marks**
If the common difference of an AP is 5, then what is $a_{18} - a_{13}$?

A. 5 B. 20 C. 25 D. 30

Q59. Choose the correct answer from the given four options: **1 Marks**
The value of c for which the pair of equations cx - y = 2 and 6x - 2y = 3 will have infinitely many solutions is:

A. 3. B. -3. C. -12. D. No value.

Q60. The largest number which divides 33 and 75, leaving remainders 1 and 3 respectively is: **1 Marks**

A. 8 B. 12 C. 16 D. 6