



CPT QA TEST 2(12/06/2018)

NAME : QA: CA: X 1 = WA: X 0.25= () NMO:

TIME ALLOWED 75 MIN

1. Roots of the equation $9x^2 - 14x - 9k = 0$ will be reciprocal of each other if :
(a) $k = -3$ (b) $k = -1$ (c) $k = 3$ (d) $k = 1$
2. Find the equation of the line passing through the point (12, 11) and parallel to the line $3x + 5y - 21 = 0$
(a) $3x + 5y - 91 = 0$ (b) $5x + 3y + 24 = 0$ (c) $5x + 3y - 91 = 0$ (d) $3x + 5y - 24 = 0$
3. A number of men went to a hotel and each spent as many rupees as there were men. If the money spent was Rs. 21025; find the number of men.
(a) 110 (b) 125
(c) 145 (d) None of these
4. Rs.9300 becomes Rs.11160 in two years at simple interest. The amount that will become Rs.5460 in 3 years at the same rate of interest is :
(a) Rs.2400 (b) Rs.4200 (c) Rs.4002 (d) Rs. 2004
5. The difference between the simple and compound interest on a certain sum for 3 year at 10% p.a. is Rs. 155. The sum is :
(a) Rs.4500 (b) Rs.5400 (c) Rs.5000 (d) Rs.4000
6. The present value of an annuity of Rs.3,000 for 8 years at 10% p.a. C.I. is:
(a) Rs.16400.78 (b) Rs.16040.78 (c) Rs.16004.78 (d) None
7. In what time will Rs.2800 amount to 3413.17 Rs. at 4% per annum, when the interest is compounded semiannually?
(a) 2 years (b) 4 years (c) 5 years (d) 7 years
8. If the simple interest on a sum of money at 10% p.a. for two years is Rs.480 . The compound interest on the same sum for 5 years at the same rate is :
(a) Rs.1465.22 (b) Rs.1564.22 (c) Rs.1654.22 (d) none
9. Positive Value of 'k' for which the roots of equation $x^2 - kx + 112 = 0$ are in ratio 4: 7, is
(a) -11 (b) 22 (c) -22 (d) 11
10. The future value of an annuity of Rs. 8900 is made annually for 6 years at interest rate of 7% p.a compounded annually is _____
(a) Rs.63664.29 (b) Rs.66643.29 (c) Rs.63334.29 (d) none

11. The total cost curve of the number of copies of a particular photograph is linear. The total cost of 15 and 28 copies of a photograph are Rs. 205 and Rs. 296 respectively. The total cost for 10 copies of the photograph will be
 (a) Rs. 150 (b) Rs. 160 (c) Rs. 170 (d) Rs. 140
12. If $g(x) = (x-1)/x$, $g(-\frac{1}{2})$ is
 (a) 1 (b) 2 (c) $3/2$ (d) 3
13. If $A = \{1, 2, 3, 5, 7\}$ and $B = \{1, 3, 6, 10, 15\}$. Cardinal number of $A-B$ is
 (a) 3 (b) 4 (c) 6 (d) none of these
14. The value of the limit when x tends to 3 of the expression $(x^2 + 2x - 15)/(x^2 - 9)$ is
 (a) $4/3$ (b) $3/4$ (c) $1/2$ (d) indeterminate
15. Out of 25 members in a family 18 like cricket, 10 like Football, 5 like nothing. Find how many like only cricket.
 (a) 12 (b) 10 (c) 14 (d) 15
16. Out of 22 members in a family 11 like only maths, 8 like statistics, 2 like both. Find how many like nothing.
 (a) 2 (b) 3 (c) 1 (d) 5
17. If $f(x) = 3$, when $x < 2$
 $f(x) = kx^2$, when $x \geq 2$ is continuous at $x = 2$, then the value of k is
 (a) $3/4$ (b) $4/3$ (c) $1/3$ (d) none of these.
18. The value of the limit when n tends to infinity of the expression $(7n^3 - 8n^2 + 10n - 7) \div (8n^3 - 9n^2 + 5)$ is
 (a) $7/8$ (b) $8/7$ (c) 1 (d) None
19. The set $\{0, 2, 4, 6, 8, 10\}$ can be written as
 (a) $\{2x \mid 0 < x < 5\}$ (b) $\{x : 0 < x < 5\}$ (c) $\{2x : 0 < x \leq 5\}$ (d) none of these
20. $\{1 - (-1)^x\}$ for all integral x is the set
 (a) $\{0\}$, (b) $\{2\}$, (c) $\{0, 2\}$ (d) none of these
21. The letters of the words 'CALCUTTA' and 'AMERICA' are arranged in all possible ways. The ratio of the number of these arrangements is
 (a) 1:2 (b) 2:1 (c) 2:2 (d) none of these
22. The number of ways in which a person can choose one or more of the five electrical appliances : T.V, Refrigerator, Washing Machine, Iron and a cooler is
 (a) 15 (b) 25 (c) 31 (d) none of these
23. 15 points are marked on the circumference of a circle. The number of chords obtained by joining these in pairs is
 (a) 105 (b) 27 (c) 28 (d) none of these
24. A committee of 3 ladies and 4 gents is to be formed out of 8 ladies and 7 gents. Mrs. X

- refuses to serve in a committee in which Mr. Y is a member. The number of such committees is
- (a) 1530 (b) 1500 (c) 1520 (d) 1540
25. Five bulbs of which two are defective are to be tried in two bulb points in a dark room. Number of trials the room shall be lighted is
- (a) 6 (b) 8 (c) 9 (d) 7.
26. In how many ways letters of 'REGULATION' be arranged so that the vowels come at odd places?
- (a) 128 (b) 140 (c) 138 (d) None of these
27. The number of arrangements in which the letters of the word 'TUESDAY' be arranged so that the words thus formed begin with S and do not end with T is
- (a) 720 (b) 120 (c) 600 (d) none of these
28. The number of permutations of 9 different things taken 3 at a time in which one particular thing always occurs is
- (a) 3,020 (b) 168 (c) 3,024 (d) none of these
29. The number of numbers lying between 10 and 1000 can be formed with the digits 2,3,,0,8,9 is
- (a) 124 (b) 120 (c) 125 (d) none of these
30. In a group of boys the number of arrangement of 3 boys is 12 times the number of arrangements of 2 boys. The number of boys in the group is
- (a) 10 (b) 16 (c) 6 (d) none of these
31. Out of 5 men and 2 women, a committee of 3 is to be formed. In how many ways can it be formed if at least one woman is included each committee.
- (a) 25 (b) 14 (c) 21 (d) none
32. In how many arrangement can be made with the letters of words 'MATHEMATICS'
- (a) $11! / (2!) (2!) (2!)$ (b) $11! / (2!) (2!)$
(c) $11!$ (d) none of these
33. The number of ways in which the letters of the word 'KRISHNA' be arranged so that consonants always occupy the odd places is
- (a) 36 (b) 63 (c) 30 (d) none of these.
34. If 6 times the no. of permutations of n items taken 3 at a time is equal to 7 times the no. of permutations of (n-1) items taken 3 at a time then the value of n will be
- (a) 7 (b) 9
(c) 13 (d) 21
35. The sum of n terms of an AP is $3n^2 + 5n$. The series is
- (a) 8, 14, 20, 26 (b) 8, 22, 42, 68 (c) 22, 68, 114, (d) none
36. The pth term of an AP is $(3p - 1)/6$. The sum of the first n terms of the AP is
- (a) $n(3n + 1)$ (b) $n/12(3n + 1)$ (c) $n/12(3n - 1)$ (d) none
37. Which term of the progression $-1, -3, -5, \dots$ is -39
- (a) 21^{st} (b) 20^{th} (c) 19^{th} (d) 18^{th}
38. The value of x such that $8x + 4, 6x, 2x + 7$ will form an AP is
- (a) $13/2$ (b) $11/2$ (c) $15/2$ (d) $9/2$

39. The m th term of an A. P. is n and n th term is m . The 7th term of it is
 (a) $m + n + 7$ (b) $n + m - 14$ (c) $m + n + 14$ (d) $m + n - 7$
40. The n th term of the series whose sum to n terms is $5n^2 + 2n$ is
 (a) $3n - 10$ (b) $10n - 2$ (c) $10n - 3$ (d) none of these
41. The sum of the first 4 terms of a G. P is 17 times the sum of its first 2 terms. The common ratio is
 (a) $\sqrt{19}$ (b) ± 4 (c) $\sqrt{8}$ (d) none
42. Sum of the infinite series $1 + 3 + 9 + 27 + \dots$ is 121. Then number of terms --
 (a) 5 (b) 6 (c) 4 (d) none

43. Given $x = 2t$; $y = t^2 - 2$, then $\frac{dy}{dx}$ is calculated as:
 (a) t (b) $1/t$ (c) $-1/t$ (d) None
44. If $x^3 - 2x^2y^2 + 5x + y = 5$, then $\frac{dy}{dx}$ at $x=1$ and $y=1$ is
 (a) $4/3$ (b) $-5/4$ (c) $4/5$ (d) $-4/3$
45. $\int \frac{1}{x^2 - a^2} dx$ is
 (a) $\log(x-a) - \log(x+a) + C$ (b) $\log x - \frac{a}{x+a} + C$ (c) $\frac{1}{2a} \log\left(\frac{x-a}{x+a}\right) + C$ (d) None
46. $\int_1^4 (2x+5) dx$ and the value is:
 (a) 10 (b) 3 (c) 30 (d) none
47. Evaluate $\int x \cdot e^x dx$
 (a) $e^x(x+1) + c$
 (b) $e^x(x-1) + c$
 (c) $e^x + c$
 (d) $e - e^x + c$
48. If $y = 1 + x + \frac{x^2}{2!} + \frac{x^3}{3!} + \dots + \frac{x^n}{n} + \dots \infty$
 Then $\frac{dy}{dx} - y$ is equal to:
 (a) 1 (b) -1 (c) 0 (d) None

49. If $x : y = 3 : 4$, the value of $x^2y + xy^2 : x^2 + y^2$ is

- a) 13 : 12
- b) 12 : 13
- c) 21 : 31
- d) None of these

50. $2^x - 2^{x-1} = 8$ then x is equal to

- (a) 27 (b) 4 (c) 1 (d) 256

ALL THE BEST

DUSHYANT CHATURVEDI CLASSES (7760967889)