|  |  |
| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | IF f(x)=(x-1)/(x+1), then f(x)+ f(1/x)= |
| ((OPTION\_A)) | x+1 |
| ((OPTION\_B)) | x-1 |
| ((OPTION\_C)) | 1 |
| ((OPTION\_D)) | 0 |
| ((CORRECT\_CHOICE)) (A/B/C/D) | D |
| ((EXPLANATION)) (OPTIONAL) |  |

|  |  |
| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | If the lines 2x+y-3=0, 5x+ky-3=0, and 3x-y-2=0 are concurrent, then the value of k is |
| ((OPTION\_A)) | 1 |
| ((OPTION\_B)) | -1 |
| ((OPTION\_C)) | 2 |
| ((OPTION\_D)) | -2 |
| ((CORRECT\_CHOICE)) (A/B/C/D) | C |
| ((EXPLANATION)) (OPTIONAL) |  |

|  |  |
| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | If  z=((√3+i)^3 (3i+4)^2)/(8+6i)^2 , then |z| is equal to |
| ((OPTION\_A)) | 0 |
| ((OPTION\_B)) | 1 |
| ((OPTION\_C)) | 2 |
| ((OPTION\_D)) | 3 |
| ((CORRECT\_CHOICE)) (A/B/C/D) | C |
| ((EXPLANATION)) (OPTIONAL) |  |

|  |  |
| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | If |z^2-1|=|z|^2+1, then z lies on |
| ((OPTION\_A)) | Real axis |
| ((OPTION\_B)) | Imaginary axis |
| ((OPTION\_C)) | A circle |
| ((OPTION\_D)) | None of these |
| ((CORRECT\_CHOICE)) (A/B/C/D) | B |
| ((EXPLANATION)) (OPTIONAL) |  |

|  |  |
| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | If α and β are roots of the equation x2 + x + 1 = 0 then A^2+ β^2is |
| ((OPTION\_A)) | 2 |
| ((OPTION\_B)) | 4 |
| ((OPTION\_C)) | 1 |
| ((OPTION\_D)) | None of these |
| ((CORRECT\_CHOICE)) (A/B/C/D) | D |
| ((EXPLANATION)) (OPTIONAL) |  |

|  |  |
| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | The observations of a variable X are, -4, -20, -30, -44 and -36, then the value of the range will be |
| ((OPTION\_A)) | 48 |
| ((OPTION\_B)) | -48 |
| ((OPTION\_C)) | 40 |
| ((OPTION\_D)) | -40 |
| ((CORRECT\_CHOICE)) (A/B/C/D) | C |
| ((EXPLANATION)) (OPTIONAL) |  |

|  |  |
| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | **The mean of the data: 6, 7, 10, 12, 13, 4, 8, 12 is** |
| ((OPTION\_A)) | 9 |
| ((OPTION\_B)) | 10 |
| ((OPTION\_C)) | 12 |
| ((OPTION\_D)) | 13 |
| ((CORRECT\_CHOICE)) (A/B/C/D) | A |
| ((EXPLANATION)) (OPTIONAL) |  |

|  |  |
| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | Mean and standard deviation of 100 items is 50 and 4 respectively. The sum of all squares of the items is |
| ((OPTION\_A)) | 251600 |
| ((OPTION\_B)) | 256100 |
| ((OPTION\_C)) | 266000 |
| ((OPTION\_D)) | 261600 |
| ((CORRECT\_CHOICE)) (A/B/C/D) | A |
| ((EXPLANATION)) (OPTIONAL) |  |

|  |  |
| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | The middle term of expansion of (10/x + x/10)^10 is |
| ((OPTION\_A)) | 225 |
| ((OPTION\_B)) | 240 |
| ((OPTION\_C)) | 252 |
| ((OPTION\_D)) | None of these |
| ((CORRECT\_CHOICE)) (A/B/C/D) | C |
| ((EXPLANATION)) (OPTIONAL) |  |

|  |  |
| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | If 1+ sinθ+sin^2 (θ)+….+ up to ∞=2√3+4, then θ= |
| ((OPTION\_A)) | 30° |
| ((OPTION\_B)) | 45° |
| ((OPTION\_C)) | 60° |
| ((OPTION\_D)) | None of these |
| ((CORRECT\_CHOICE)) (A/B/C/D) | C |
| ((EXPLANATION)) (OPTIONAL) |  |

|  |  |
| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | If 9 times the 9th term of an A.P is equal to 13 times the 13 th term, then the 22nd term of the A.P is |
| ((OPTION\_A)) | 0 |
| ((OPTION\_B)) | 22 |
| ((OPTION\_C)) | 220 |
| ((OPTION\_D)) | 198 |
| ((CORRECT\_CHOICE)) (A/B/C/D) | A |
| ((EXPLANATION)) (OPTIONAL) |  |

|  |  |
| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | If sinθ1+ sinθ2 + sinθ3 =3, then cosθ1+ cosθ2 + cosθ3 = |
| ((OPTION\_A)) | 0 |
| ((OPTION\_B)) | 1 |
| ((OPTION\_C)) | 2 |
| ((OPTION\_D)) | 3 |
| ((CORRECT\_CHOICE)) (A/B/C/D) | A |
| ((EXPLANATION)) (OPTIONAL) |  |

|  |  |  |
| --- | --- | --- |
| ((MARKS)) (1/2/3...) | 1 |  |
| ((QUESTION)) | A bag contains 5 brown and 4 black socks. A man pulls out two socks. The Probability that both the socks are of the same colour is |  |
| ((OPTION\_A)) | 9/108 |  |
| ((OPTION\_B)) | 36/108 |  |
| ((OPTION\_C)) | 48/108 |  |
| ((OPTION\_D)) | 18/108 |  |
| ((CORRECT\_CHOICE)) (A/B/C/D) | C |  |
| ((EXPLANATION)) (OPTIONAL) |  |  |

|  |  |
| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | The area of the circle centred at (1, 2) and passing through (4, 6) is |
| ((OPTION\_A)) | 5π |
| ((OPTION\_B)) | 10π |
| ((OPTION\_C)) | 20π |
| ((OPTION\_D)) | 25π |
| ((CORRECT\_CHOICE)) (A/B/C/D) | D |
| ((EXPLANATION)) (OPTIONAL) |  |

|  |  |
| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | **If the parabola x^2 = 4ay passes through the point (2, 1), then the length of the latus rectum is** |
| ((OPTION\_A)) | 8 |
| ((OPTION\_B)) | 1 |
| ((OPTION\_C)) | 4 |
| ((OPTION\_D)) | 2 |
| ((CORRECT\_CHOICE)) (A/B/C/D) | C |
| ((EXPLANATION)) (OPTIONAL) |  |

|  |  |
| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | The length of LR of 9x^2+25y^2=225 |
| ((OPTION\_A)) | 16/5 |
| ((OPTION\_B)) | 18/5 |
| ((OPTION\_C)) | 5/18 |
| ((OPTION\_D)) | None of these |
| ((CORRECT\_CHOICE)) (A/B/C/D) | B |
| ((EXPLANATION)) (OPTIONAL) |  |

|  |  |
| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | The maximum value of Z= 11x + 7y subject to the constraints: 2x+y≤6, x≤2, x≥0, y≥0 is |
| ((OPTION\_A)) | 36 |
| ((OPTION\_B)) | 42 |
| ((OPTION\_C)) | 48 |
| ((OPTION\_D)) | 50 |
| ((CORRECT\_CHOICE)) (A/B/C/D) | B |
| ((EXPLANATION)) (OPTIONAL) |  |

|  |  |
| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | If the determinant of a matrix A is Zero then A is |
| ((OPTION\_A)) | Singular |
| ((OPTION\_B)) | Non-Singular |
| ((OPTION\_C)) | Identity Matrix |
| ((OPTION\_D)) | None of these |
| ((CORRECT\_CHOICE)) (A/B/C/D) | A |
| ((EXPLANATION)) (OPTIONAL) |  |

|  |  |
| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | If A is a square matrix of order 3 and |A| =2 , then |A adj A| is |
| ((OPTION\_A)) | 4 |
| ((OPTION\_B)) | 8 |
| ((OPTION\_C)) | 16 |
| ((OPTION\_D)) | None of these |
| ((CORRECT\_CHOICE)) (A/B/C/D) | B |
| ((EXPLANATION)) (OPTIONAL) |  |

|  |  |
| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | If P and Q are symmetric matrices of the same order then PQ-QP is |
| ((OPTION\_A)) | Skew symmetric matrix |
| ((OPTION\_B)) | Symmetric matrix |
| ((OPTION\_C)) | Identity matrix |
| ((OPTION\_D)) | Null matrix |
| ((CORRECT\_CHOICE)) (A/B/C/D) | A |
| ((EXPLANATION)) (OPTIONAL) |  |

|  |  |
| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | If =500e^5x+600e^(-5x) then y″= |
| ((OPTION\_A)) | 5y |
| ((OPTION\_B)) | -5y |
| ((OPTION\_C)) | 25y |
| ((OPTION\_D)) | -25y |
| ((CORRECT\_CHOICE)) (A/B/C/D) | C |
| ((EXPLANATION)) (OPTIONAL) |  |

|  |  |
| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | The order and degree of the D.E √[(1+y′^2)]= y″ is |
| ((OPTION\_A)) | (2, 1) |
| ((OPTION\_B)) | (1, 2) |
| ((OPTION\_C)) | (2, 2) |
| ((OPTION\_D)) | None of these |
| ((CORRECT\_CHOICE)) (A/B/C/D) | C |
| ((EXPLANATION)) (OPTIONAL) |  |

|  |  |
| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | If y=tan^-1[(3+x)/(1-3x) ], then dy/dx= |
| ((OPTION\_A)) | 3/(1+x^2 ) |
| ((OPTION\_B)) | 1/(3+x^2 ) |
| ((OPTION\_C)) | 1/(1+x^2 ) |
| ((OPTION\_D)) | None of these |
| ((CORRECT\_CHOICE)) (A/B/C/D) | C |
| ((EXPLANATION)) (OPTIONAL) |  |

|  |  |
| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | The perpendicular distance of the point (6, 7, 8) from xy- plane is |
| ((OPTION\_A)) | 7 |
| ((OPTION\_B)) | 8 |
| ((OPTION\_C)) | 6 |
| ((OPTION\_D)) | 15 |
| ((CORRECT\_CHOICE)) (A/B/C/D) | B |
| ((EXPLANATION)) (OPTIONAL) |  |

|  |  |
| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | Rolle’s theorem fails for f(x)=|x| in (-2, 2), because |
| ((OPTION\_A)) | f(x) is not continues at x=0 |
| ((OPTION\_B)) | f(x) is not differentiable at x=0 |
| ((OPTION\_C)) | f(x) is not both differentiable and continues at x=0 |
| ((OPTION\_D)) | None of these |
| ((CORRECT\_CHOICE)) (A/B/C/D) | B |
| ((EXPLANATION)) (OPTIONAL) |  |

|  |  |
| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | Lim x→o (sin4x/sin2x )= |
| ((OPTION\_A)) | 2 |
| ((OPTION\_B)) | 1/2 |
| ((OPTION\_C)) | 4 |
| ((OPTION\_D)) | None of these |
| ((CORRECT\_CHOICE)) (A/B/C/D) | A |
| ((EXPLANATION)) (OPTIONAL) |  |

|  |  |
| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | The maximum value of the function 2x^3-3x^2-6x+10= |
| ((OPTION\_A)) | 60 |
| ((OPTION\_B)) | 54 |
| ((OPTION\_C)) | 50 |
| ((OPTION\_D)) | 48 |
| ((CORRECT\_CHOICE)) (A/B/C/D) | B |
| ((EXPLANATION)) (OPTIONAL) |  |

|  |  |
| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | The probability that A passes a test is 2/3 and the probability that B passes the same test is 3/5. The probability that only one of them passes is |
| ((OPTION\_A)) | 2/5 |
| ((OPTION\_B)) | 3/5 |
| ((OPTION\_C)) | 4/15 |
| ((OPTION\_D)) | 7/15 |
| ((CORRECT\_CHOICE)) (A/B/C/D) | D |
| ((EXPLANATION)) (OPTIONAL) |  |

|  |  |
| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | If A and B are independent events such that P(A)=1/2 , P(B)=7/12 then P(A′∩B′)= |
| ((OPTION\_A)) | 1/3 |
| ((OPTION\_B)) | 1/24 |
| ((OPTION\_C)) | 5/24 |
| ((OPTION\_D)) | None of these |
| ((CORRECT\_CHOICE)) (A/B/C/D) | C |
| ((EXPLANATION)) (OPTIONAL) |  |

|  |  |
| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | If A, B and C are mutually exclusive events such that P(A)=2P(B)=3 P(C) then P(B)= |
| ((OPTION\_A)) | 1/11 |
| ((OPTION\_B)) | 3/11 |
| ((OPTION\_C)) | 4/11 |
| ((OPTION\_D)) | 5/11 |
| ((CORRECT\_CHOICE)) (A/B/C/D) | B |
| ((EXPLANATION)) (OPTIONAL) |  |

|  |  |
| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | ∫(e^6logx-e^5logx)/(e^4logx-e^3logx ) dx= |
| ((OPTION\_A)) | x/2+c |
| ((OPTION\_B)) | x^3/3+c |
| ((OPTION\_C)) | log x +c |
| ((OPTION\_D)) | none of these |
| ((CORRECT\_CHOICE)) (A/B/C/D) | C |
| ((EXPLANATION)) (OPTIONAL) |  |

|  |  |
| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | ∫e^x (sin2x+sin^2 x)dx= |
| ((OPTION\_A)) | e^x sin2x+c |
| ((OPTION\_B)) | e^x sin^2 x+c |
| ((OPTION\_C)) | e^x cos^2 x+c |
| ((OPTION\_D)) | e^x cos2x+c |
| ((CORRECT\_CHOICE)) (A/B/C/D) | B |
| ((EXPLANATION)) (OPTIONAL) |  |

|  |  |
| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | The value of the definite integral between -π/2 to π/2, I=∫(x^3+xcosx)dx= |
| ((OPTION\_A)) | 0 |
| ((OPTION\_B)) | 2 |
| ((OPTION\_C)) | 1 |
| ((OPTION\_D)) | π |
| ((CORRECT\_CHOICE)) (A/B/C/D) | A |
| ((EXPLANATION)) (OPTIONAL) |  |

|  |  |
| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | The definite integral between the limits 0 to π/2 of ∫ [sinx/(sinx+cosx)] dx= |
| ((OPTION\_A)) | π/2 |
| ((OPTION\_B)) | π/4 |
| ((OPTION\_C)) | π/8 |
| ((OPTION\_D)) | 2π |
| ((CORRECT\_CHOICE)) (A/B/C/D) | B |
| ((EXPLANATION)) (OPTIONAL) |  |

|  |  |
| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | The definite integral of ∫|x-1|dx between 0 and 4 is |
| ((OPTION\_A)) | 5/2 |
| ((OPTION\_B)) | 5/4 |
| ((OPTION\_C)) | 5 |
| ((OPTION\_D)) | 4 |
| ((CORRECT\_CHOICE)) (A/B/C/D) | C |
| ((EXPLANATION)) (OPTIONAL) |  |

|  |  |
| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | The solution of the differential equation xy+2y=x^2 is |
| ((OPTION\_A)) | y = (x^2+c)/(4x^2 ) |
| ((OPTION\_B)) | y=x^2/4+c |
| ((OPTION\_C)) | y=(x^4+c)/x^2 |
| ((OPTION\_D)) | y=(x^4+c) / (4x^2) |
| ((CORRECT\_CHOICE)) (A/B/C/D) | D |
| ((EXPLANATION)) (OPTIONAL) |  |

|  |  |
| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | Area lying between the curves y^2=4x and y=2x is |
| ((OPTION\_A)) | 1/3 |
| ((OPTION\_B)) | 2/3 |
| ((OPTION\_C)) | 1/4 |
| ((OPTION\_D)) | 3/4 |
| ((CORRECT\_CHOICE)) (A/B/C/D) | A |
| ((EXPLANATION)) (OPTIONAL) |  |

|  |  |
| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | If the second and fifth terms of a G.P are 24 and 3 respectively, then sum of first six terms is |
| ((OPTION\_A)) | 189/2 |
| ((OPTION\_B)) | 2/189 |
| ((OPTION\_C)) | 189/5 |
| ((OPTION\_D)) | 179/2 |
| ((CORRECT\_CHOICE)) (A/B/C/D) | A |
| ((EXPLANATION)) (OPTIONAL) |  |

|  |  |
| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | If the triangle whose perimeter is 37 cm and length of sides are in G.P, also the smallest side is 9 cm then length of remaining two sides are |
| ((OPTION\_A)) | 12, 16 |
| ((OPTION\_B)) | 14, 14 |
| ((OPTION\_C)) | 10, 18 |
| ((OPTION\_D)) | 15, 13 |
| ((CORRECT\_CHOICE)) (A/B/C/D) | A |
| ((EXPLANATION)) (OPTIONAL) |  |

|  |  |
| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | The total revenue in rupees received from the sale of x units of a product is R(x)=x^2+6x+5. Then the marginal revenue at x = 4 is …. |
| ((OPTION\_A)) | 13 |
| ((OPTION\_B)) | 14 |
| ((OPTION\_C)) | 15 |
| ((OPTION\_D)) | 16 |
| ((CORRECT\_CHOICE)) (A/B/C/D) | B |
| ((EXPLANATION)) (OPTIONAL) |  |