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AP EAMCET Mathematics Previous Questions with Key – Test 10

1)Among the following functions defined on R into R, the constant functions is

1) $\frac{3}{5+4\sin 3x}$

2) $\frac{1}{2-\cos 3x}$

3) $\cos^2 x+\cos^2\left(x+\frac{\pi}{3}\right)+\sin x.\sin\left(x+\frac{\pi}{3}\right)$

4) $\frac{15}{3\sin x+4\cos x+10}$

2)The function f:[0, ∞)→[0, ∞) defined by f(x) = $\frac{x}{1+x}$ is

1) One-one and onto

2) One-one but not onto

3) Onto but not one-one

4) Neither one-one nor onto

3)For all n∈ N, $1+\frac{1}{\sqrt{2}}+\frac{1}{\sqrt{3}}+...+\frac{1}{\sqrt{n}}$ is

1)> n 2)< √n 3)≤ √n 4)≥ √n

4)If $\begin{vmatrix} x^2+x & x+1 & x-2 \\ 2x^2+3x-1 & 3x & 3x-3 \\ x^2+2x+3 & 2x-1 & 2x-1 \end{vmatrix}$ **=x A + B, where A and B are determinants of order 3 not** involving x, then |A| =

1)27 2)24 3)19 4)-8

5)The system of equations x + y + z = 5, x + 2y + az = 9, x + 2y + z = b is inconsistent if

1)a =1, b = 9

2)a =1, b ≠ 9

3)a ≠ 1, b = 9

4)a ≠ 1, b ≠ 9

6)If $A=\begin{bmatrix}\cos\frac{2\pi}{33} & \sin\frac{2\pi}{33}\\ -\sin\frac{2\pi}{33} & \cos\frac{2\pi}{33}\end{bmatrix}$, then $A^{2017}=$

1)A 2)A^2 3)A^4 4)$\begin{bmatrix}1 & 0\\ 0 & 1\end{bmatrix}$

7)If $(x + iy)^{1/3} = 5 + 3i$, then $3x + 5y =$

1)480 2)152 3)990 4)960

8)If $z=\left(\frac{\sqrt{3}+i}{2}\right)^5+\left(\frac{\sqrt{3}-i}{2}\right)^5$, then

1)Re (z) > 0, Im (z) < 0 2)Re (z) > 0, Im (z) > 0

3)Re (z) = 0 4)Im (z) = 0

9)Match the items of List-I with those of List-II

List-I(Complex number)	List-II (Polar form)
i)$\sqrt{3} - i$	a) $2\text{cis}\frac{\pi}{6}$
ii)$\sqrt{3} + i$	b) $2\text{cis}\frac{5\pi}{6}$
iii)$-\sqrt{3} + i$	c) $2\text{cis}\left(\frac{-5\pi}{6}\right)$
iv)$-\sqrt{3} - I$	d) $2\text{cis}\left(-\frac{\pi}{6}\right)$
	e) $2\text{cis}\frac{9\pi}{6}$

1)i-d, ii-b, iii-a, iv-e

2)i-d, ii-a, iii-b, iv-c

3)i-b, ii-d, iii-a, iv-c

4)i-b, ii-c, iii-a, iv-d

10)If $(1 + x)^n = p_0 + p_1x + p_2x^2 + \ldots + p_nx^n$, then $p_0 + p_3 + p_6 + \ldots =$

1) $\frac{1}{3}\left[2^{n-1} + \cos\frac{n\pi}{3}\right]$

2) $\frac{2}{3}\left[2^{n-1} + \cos\frac{n\pi}{3}\right]$

3) $\frac{1}{3}\left[2^{n-2} + \sin\frac{n\pi}{3}\right]$

4) $\frac{2}{3}\left[2^{n-2} + \sin\frac{n\pi}{6}\right]$

11)The solution set contained in R^+ of the inequation $3^x + 3^{1-x} - 4 < 0$ is

1)(1, 3)

2)(0, 1)

3)(0, 1]

4)(0, 2)

12)The maximum value of the expression $\frac{x^2 + x + 1}{2x^2 - x + 1}$, for $x \in R$, is

1) $\frac{7 + 2\sqrt{7}}{7}$

2) $\frac{7 - 2\sqrt{7}}{7}$

3) $\frac{7}{3}$

4) $\frac{14 + 2\sqrt{7}}{7}$

13)If the equation $x^5 - 3x^4 - 5x^3 + 2yx^2 - 32x + 12 = 0$ has repeated roots, then the prime number that divides then non-repeated root of this equation is

1)7

2)5

3)3

4)2

14)If α, β are the roots of $x^2 - 3x + a = 0$ and γ, δ are the roots of $x^2 - 12x + b = 0$ and α, β, γ, δ in that order form a geometric progression in increasing order with common ratio r > 1, then a + b =

1)16

2)28

3)34

4)42

15)The number of subsets of {1, 2, 3, …… , 9) containing at least one odd number is

1)324

2)396

3)512

4)496

16)Suppose t_n is the number of triangles formed using the vertices of a regular polygon of n sides. If $t_{n+1} = t_n + 28$, then n =

1)11

2)9

3)8

4)7

17)The number of integers greater than 3000 that can be formed by any number of digits from 0, 1, 2, 3, 4, 5 without repetition in each number is

1)1630 2)1380 3)1260 4)1200

18)If |x| is so small that all terms containing x^2 and higher powers of x can be neglected, then approximate value of $\frac{(3-5x)^{\frac{1}{2}}}{(5-3x)^2}$, when $x = \frac{1}{\sqrt{363}}$, is

1) $\frac{\sqrt{3}}{25}$ 2) $\frac{1+30\sqrt{3}}{75}$ 3) $\frac{1-30\sqrt{3}}{75}$ 4) $\frac{1+30\sqrt{3}}{750}$

19)If the first three terms in the binomial expansion of $(1 + bx)^n$ in ascending powers of x are 1, $6x^2$ respectively then b + n =

1)$\frac{28}{3}$

2)$\frac{15}{2}$

3)$\frac{29}{3}$

4)$\frac{17}{3}$

20)If $\frac{x^4}{(x-1)(x-2)(x-3)} = Ax + B.\frac{1}{(x-1)} + C.\frac{1}{(x-2)} + D.\frac{1}{(x-3)} + E$, then A + B + C + D + E = 0

1)-12

2)6

3)8

4)32

21)If cosα + cosβ = a, sinα + sinβ = b and α - β = 2θ, then $\frac{\cos 3\theta}{\cos\theta} =$

1)$a^2 + b^2 - 2$

2)$a^2 + b^2 - 3$

3)$3^2 - a^2 – b^2$

4)$\frac{a^2 + b^2}{4}$

22)$\cos^3\theta + \cos^3(120° + \theta) + \cos^3 + (\theta - 120°) =$

1)$\frac{\sqrt{3}}{2}\cos\theta$

2)$¾\sec^3\theta$

3)$\frac{3}{2}\tan^3\theta$

4)¾cos3θ

23)The general solution of the trigonometric equation $(\sqrt{3} -1)\sin\theta + (\sqrt{3} + 1)\cos\theta = 2$ is

1) $2n\pi\frac{\pi}{4}+\frac{\pi}{12}$

2) $n\pi+(-1)^n\frac{\pi}{4}+\frac{\pi}{12}$

3) $2n\pi\pm\frac{\pi}{4}-\frac{\pi}{12}$

4) $n\pi + (-1)^n\frac{\pi}{4}-\frac{\pi}{12}$

24)Suppose $S_a(x) = Sec^{-1}\left(\frac{x}{a}\right)+Sec^{-1}(a)$ for $a \neq 0$. If $S_a(x) = S_b(x)$ for $a \neq b$ tehn x =

1)1

2)±ab

3)ab

4)-ab

25)If sinx cosh y = cosθ and cos x sinh y = sinθ, then $\sinh^2 y$ =

1) $\cosh^2 x$

2) $\cos^2 x$

3) $\sin^2 x$

4) $\sinh^2 x$

26)In ΔABC, if $a = 2(\sqrt{3} + 1)$, B = 45°, C = 60°, then the area (in sq. units) of that triangle is

1) $2\sqrt{3}$ 2)6 3) $6+2\sqrt{3}$ 4) $6-2\sqrt{3}$

27)The equation $x^2 - 2\sqrt{3}x + 2 = 0$ represents two sides of a triangle. If the angle between them is $\frac{\pi}{3}$, then the perimeter of that triangle is

1) $2\sqrt{3} + 6$

2) $2\sqrt{3} + \sqrt{6}$

3) $3\sqrt{2} + 6$

4) $3\sqrt{2} + \sqrt{6}$

28)In ΔABC, if b =2, c = $\sqrt{3}$, $\angle A = 30°$, then its inradius r =

1)$\sqrt{3} - 1$

2)$\sqrt{3} + 1$

3)$\frac{\sqrt{3}+1}{2}$

4)$\frac{\sqrt{3}-1}{2}$

29)If M is the foot of the perpendicular drawn from P(1, 2, -1) to the plane passing through the point A(3, -2, 1) and perpendicular to the vector $4\bar{i}+7\bar{j}-4\bar{k}$, then the length of PM, in proper units, is

1)$\frac{24}{9}$

2)$\frac{26}{9}$

3)$\frac{28}{9}$

4)$\frac{32}{9}$

30)The Cartesian equation of the line passing through the point $\bar{i}-2\bar{j}+\bar{k}$ and parallel to the vector $\bar{i}+\bar{j}+3\bar{k}$ is

1)(x – 1) = (y + 2) = (z – 1)

2)$\frac{(x-1)}{3}=\frac{(y+2)}{1}=\frac{(z-1)}{2}$

3)$\frac{(x-1)}{3}=\frac{(y+2)}{1}=\frac{(z-1)}{3}$

4)$\frac{(x+1)}{3}=\frac{(y-2)}{1}=\frac{(z+1)}{3}$

31)A vector magnitude $\sqrt{51}$ which makes equal angles with the vectors $\bar{a}=\frac{1}{3}(\bar{i}-2\bar{j}+2\bar{k}), \bar{b}=\frac{1}{5}(-4\bar{i}-3\bar{k})$ and $\bar{c}=\bar{j}$, is

1)$5\bar{i}-\bar{j}+5\bar{k}$ 2)$-5\bar{i}-\bar{j}-5\bar{k}$ 3)$-5\bar{i}+\bar{j}+5\bar{k}$ 4)$-\bar{i}-\bar{j}+7\bar{k}$

32)A unit vector orthogonal to the vector $3\bar{i}+4\bar{j}+5\bar{k}$ and coplanar with the vectors $\bar{i}+\bar{j}+\bar{k}$ and $\bar{i}-\bar{j}+\bar{k}$ is

1)$\frac{1}{5}(4\bar{i}-3\bar{j})$

2)$\frac{1}{\sqrt{11}}(3\bar{i}-\bar{j}-\bar{k})$

3)$\frac{1}{3}(2\bar{i}+\bar{j}-2\bar{k})$

4)$\frac{1}{\sqrt{6}}(\bar{i}-2\bar{j}+\bar{k})$

33)Let $\bar{a}$ and $\bar{b}$ be two non-collinear unit vectors. If $\bar{u}=\bar{a}-(\bar{a}.\bar{b})\bar{b}$ and $\bar{v}=\bar{a}\times\bar{b}$, then $|\bar{v}|=$

1)$|\bar{u}|$

2)$|\bar{a}|$

3)$|\bar{b}|$

4)$|\bar{a}||\bar{b}|$

34)The shortest distance between the line passing through the point $\bar{i}+2\bar{j}+3\bar{k}$ and parallel to the vector $2\bar{i}+3\bar{j}+4\bar{k}$ and the line passing through the point $2\bar{i}+4\bar{j}+5\bar{k}$ and parallel to the vector $3\bar{i}+4\bar{j}+5\bar{k}$, is

1)9 2)$\frac{1}{\sqrt{6}}$ 3)1 4)$\sqrt{6}$

35)The standard deviation of the following distribution is

Class interval	0-10	10-20	20-30	30-40
Frequency	1	3	4	2

1)9 2)8 3)7 4)6

36)a, a + d, a + 2d, ..., a + 2nd from their mean is equal to

1) $\frac{(n+1)d}{2n+1}$

2) $\frac{n(n+1)d}{2n+1}$

3) $\frac{(n+1)|d|}{2n}$

4) $\frac{n(n+1)|d|}{2n+1}$

37)If 5 red roses and 5 white roses of different sizes are used in preparing a garland, the probability that red and white roses come alternately is

1) $\frac{1}{252}$

2) $\frac{1}{126}$

3) $\frac{1}{63}$

4) $\frac{5}{126}$

38)There are eight different coloured balls and 8 bags having the same colours as that of the balls. If one ball is placed at random in each one of the bags, then the probability that 5 of the balls are placed in the respective coloured bags, is

1) $\frac{1}{120}$

2) $\frac{1}{160}$

3) $\frac{1}{180}$

4) $\frac{1}{360}$

39)If the probability function of a random variable X is given by $P(X = k) = \frac{3^{ck}}{k!}$ for k = 1, 2, 3, ... (where c is a constant), then c =

1)$\frac{1}{2}\log_3(\log_e 2)$

2) $\frac{1}{2}\log_2(\log_e 3)$

3)$\log_3(\log_e 2)$

4)$\log_2(\log_e 3)$

40)If X is a Poisson variate with mean 2, then $P\left(X > \frac{3}{2}\right) =$

1)$\frac{e^2 - 1}{2}$

2)$\frac{e^2 - 1}{e}$

3)$\frac{e^2 - 3}{e^2}$

4)$\frac{e^2 - 1}{e^2}$

41)The locus of the point P such that the area of the ΔPAB is 7, where A (4, 5) and B(-2, 3) are given points, is

1)a straight line

2)a pair of parallel lines

3)a circle

4)an ellipse

42)If the point P(4, 1) undergoes a reflection in the line x – y = 0, then a translation through a distance of 2 units along the positive X-axis and finally projected on the X-axis, then the coordinates of P in the final position, is

1)(3, 4) 2)(3, 0) 3)(1, 0) 4)(4, 3)

43)A straight line L cuts both the lines 5x – y – 4 = 0 and 3x + 4y – 4 =0. The segment of L between the two lines is bisected at the point (1, 5). The equation of L is

1)63x – 32y + 62 = 0

2)36 – 53y – 72 =0

3)38x – 65y – 45 = 0

4)8x – 35y + 92 = 0

44)If the line (2x + 3y + 4) + λ(6x – y + 12) = 0 is perpendicular to the line 7x + 5y = 2, then λ =

1)$\frac{-27}{39}$

2)$\frac{-29}{37}$

3)$\frac{-27}{37}$

4)$\frac{-28}{37}$

45)If P(-1, 0), Q(0, 0) and R(3, 3√3) are three points, then the equation of the bisector of the ∠PQR is

1)x + √3 y = 0 2)√3x + y = 0

3)$x+\frac{\sqrt{3}}{2}y=0$ 4)$\frac{\sqrt{3}}{2}x+y=0$

46)The product of the perpendicular distances drawn from the origin to the pair of straight lines $6x^2 – 5xy – 6y^2 + x + 5y – 1 = 0$ is

1)1

2)$\frac{1}{12}$

3)$\frac{1}{13}$

4)13

47)If the slope of one of the lines represented by $2x^2 + 3xy + ky^2 = 0$ is 2, then the angle between the pair of lines is

1) $\frac{\pi}{2}$

2) $\frac{\pi}{3}$

3) $\frac{\pi}{6}$

4) $\frac{\pi}{4}$

48)The angle between the lines joining the origin to the points of intersection of $x + 2y + 1 = 0$ and $2x^2 - 2xy + 3y^2 + 2x - y - 1 = 0$ is

1) $\frac{\pi}{4}$

2) $\frac{\pi}{3}$

3) $\frac{\pi}{2}$

4) $\frac{\pi}{6}$

49)The power of the point (-3, 7) with respect to a circle, with centre (3, 7) and radius 2, is

1)49

2)$\sqrt{32}$

3)32

4)7

50)The equation of the circle with (1, 1) as centre and which cuts a chord of length $4\sqrt{2}$ units on the line $x + y + 1 = 0$ is

1)$x^2 + y^2 - 2x - 2y - 21 = 0$

2)$2x^2 + y^2 - 4x - 4y - 21 = 0$

3)$x^2 + y^2 - 2x - 2y - 10 = 0$

4)$2x^2 + y^2 - 4x - 4y - 25 = 0$

51)The area of the triangle (in sq.units) formed by the tangents drawn from P(4, 4) to the circle $S \equiv x^2 + y^2 - 2x - 2y - 7 = 0$ and the chord of contact of P with respect to S = 0 is

1)4.5

2)8.1

3)6.75

4)1.5

52)The pole of the line x + y + 2 = 0 with respect to the circle $x^2 + y^2 - 4x + 6y - 12 = 0$ is

1)(23, 28)

2)(-23, 28)

3)(23, -28)

4)(-23, -28)

53)The angle between the circles $x^2 + y^2 + 4x - 14y + 28 = 0$ and $x^2 + y^2 - 12x - 6y - 4 = 0$ is

1)60°

2)$\mathrm{Cos}^{-1}\frac{3}{35}$

3)45°

4)$\mathrm{Cos}^{-1}\left(\frac{2}{\sqrt{5}}\right)$

54)The length of the common chord of the circles $x^2 + y^2 + 3x + 5y + 4 = 0$ and $x^2 + y^2 + 5x + 3y + 4 = 0$

1)1

2)2

3)3

4)4

55)The angle subtended by the normal chord at the point (9, 9) on the parabola $y^2 = 9x$, at the focus of the parabola is

1)45° 2)60° 3)90° 4)135°

56)If the vertex of a parabola is (4, 3) and its directrix is $3x + 2y – 7 = 0$, then the equation of latus rectum of the parabola is

1)$3x + 2y – 18 = 0$

2)$2x + 2y – 29 = 0$

3)$3x + 2y – 8 = 0$

4)$3x + 2y – 31 = 0$

57)The equation of a common tangent to the circle $x^2 + y^2 = 16$ and to the ellipse $\frac{x^2}{49}+\frac{y^2}{4}=1$ is

1) $y = x+\sqrt{45}$

2) $y = x+\sqrt{53}$

3) $\sqrt{11}y = 2x+4$

4) $\sqrt{11}y = 2x+4\sqrt{15}$

58)The equation of the ellipse with $x + y + 2 = 0$ as its directrix, one of its focus at (1, -1) and having eccentricity $\frac{2}{3}$ is

1)$7x^2 + 7y^2 + 4xy + 26x + 26y + 10 = 0$

2)$7x^2 + 7y^2 - 4xy - 26x - 26y - 10 = 0$

3)$7x^2 + 7y^2 - 4xy + 26x + 26y - 10 = 0$

4)$7x^2 + 7y^2 + 4xy - 26x - 26y + 10 = 0$

59)Let C be the centre of the hyperbola $\frac{x^2}{a^2}-\frac{y^2}{b^2}=1$ and P be a point on it. If the tangent at P to the hyperbola meets the straight lines $bx – ay = 0$ and $bx + ay = 0$ respectively in Q and R, then CQ.CR =

1)$a^2 – b^2$ 2)$a^2 + b^2$ 3)$\frac{1}{a^2}-\frac{1}{b^2}$ 4)$\frac{1}{a^2}+\frac{1}{b^2}$

60)If A = (5, 4, 2), B = (6, 2, -1), C = (8, -2, -7), then the harmonic conjugate of A with respect to B and C is

1)(7, 0, -3)

2)$\left(\frac{13}{2}, -1, \frac{-5}{2}\right)$

3)$\left(\frac{13}{2}, 1, \frac{-5}{2}\right)$

4)$\left(\frac{11}{2}, 3, \frac{1}{2}\right)$

61)If the line joining (2, 3, -1) and (3, 5, -3) is perpendicular to the line joining A(1, 2, 3) and B(α, β, γ) then a possible point for B is

1)(-3, 5, 7)

2)(3, -5, 7)

3)(3, 5, -7)

4)(3, 5, 7)

62)If a plane passes through (1, -2, 1) and is perpendicular to the planes 2x -2y + z = 0 and x – y + 2z = 4, then the distance of that plane from the point (1, 2, 2) is

1)$\sqrt{2}$

2)2

3)$2\sqrt{2}$

4)4

63)If $\Delta(x) = \begin{vmatrix} e^x & -1 \\ \sin x - 1 & 1 \end{vmatrix}$, then $\lim_{x\to 0} \frac{\Delta(x)}{x} =$

1)1

2)2

3)-1

4)3

64)If $f(x) = \begin{cases} \frac{\cos ax - \cos bx}{x^2}, & x \neq 0 \\ \frac{1}{2}(a^2 - b^2, & x = 0 \end{cases}$

Where a, b are real and district constants, then

1)f is discontinuous at x = 0

2)f is continuous at x = 0

3) $\lim_{x \to 0} f(x)$ does not exist

4)f(0) is not defined

65)If $ay^4 = (x + b)^5$, then $\frac{y\left(\frac{d^2y}{dx^2}\right)}{\left(\frac{dy}{dx}\right)^2} =$

1)5

2)-5

3) $\frac{1}{5}$

4) $\frac{-1}{5}$

66) $x^3 + y^3 = 3xy \Rightarrow \frac{dy}{dx} =$

1) $\frac{y - x^2}{y^2 - x}$

2) $\frac{y + x^2}{y^2 + x}$

3) $\frac{y - x^2}{y^2 + x}$

4) $\frac{y + x^2}{y^2 - x}$

67)If $y = \mathrm{Tan}^{-1}\left(\frac{2x}{1-x^2}\right), |x|<1$, then $\left(\frac{dy}{dx}\right)_{x=\frac{1}{2}} =$

1)$\frac{1}{5}$

2)$\frac{2}{5}$

3)$\frac{4}{5}$

4)$\frac{8}{5}$

68)The length of the normal to the curve x =a (θ + sinθ), y = a(1 - cosθ) at $\theta = \frac{\pi}{2}$ is

1)a^2

2)$a\sqrt{2}$

3)2a

4)a

69)each edge of a cube is expanding at the rate of 1cm/sec. Then the rate (in cc/sec.) of change in its volume, when each of its edge is of length 5cm is

1)25

2)75

3)125

4)175

70)Lagrange's mean value theorem is not applicable in [0, 1] to the function

1)$f(x)=\begin{cases} \frac{1}{2}-x, & x<\frac{1}{2} \\ (\frac{1}{2}-x)^2, & x\geq\frac{1}{2} \end{cases}$

2)$f(x)=\begin{cases} \frac{\sin x}{x}, & x\neq 0 \\ 1, & x=0 \end{cases}$

3)f(x) = |x|

4)f(x) = |x|

71)The shortest distance between the line y-x = 1 and the curve x = y^2 is

1) $\frac{2\sqrt{3}}{8}$

2) $\frac{3\sqrt{2}}{5}$

3) $\frac{\sqrt{3}}{4}$

4) $\frac{3\sqrt{2}}{8}$

72) $\int \frac{e^x - 1}{e^x + 1} dx =$

1) $2\log_e(1+e^x) + x + c$

2) $2\log_e(1+e^x) - x + c$

3) $\log_e(1+e^x) + x + c$

4) $\log_e(1+e^x) - x + c$

73) $\int \cos^{-1}(2x^2 - 1) dx$

1) $2(x\sin^{-1}x + \sqrt{1-x^2}) + c$

2) $2(x\cos^{-1}x + \sqrt{1-x^2}) + c$

3) $2(x\cos^{-1}x - \sqrt{1-x^2}) + c$

4) $2(x\sin^{-1}x - \sqrt{1-x^2}) + c$

74) $\int \frac{dx}{x(x^2+1)^3} =$

1) $\frac{1}{2(x^2+1)} + \frac{1}{4(x^2+1)^2} + \log\sqrt{\frac{x^2}{x^2+1}} + c$

2) $\frac{1}{x^2+1} + \frac{1}{2(x^2+1)^2} + \log\sqrt{\frac{x}{x^2+1}} + c$

3) $\frac{1}{2(x^2+1)} + \frac{1}{4(x^2+1)^3} + \log\sqrt{\frac{x}{x+1}} + c$

4) $\frac{2}{x^2+1} - \frac{1}{4(x^2+1)^2} - \log\sqrt{\frac{x}{x+1}} + c$

75) $\int x^5 e^{-2x} dx =$

1) $e^{-2x}\left[\frac{x^5}{2}-\frac{5x^4}{2^2}+\frac{20x^3}{2^3}-\frac{60x^2}{2^4}+\frac{120x}{2^5}-\frac{120}{2^6}\right]+c$

2) $-e^{-2x}\left[\frac{x^5}{2}+\frac{5x^4}{4}+\frac{5x^3}{2}+\frac{15x^2}{4}+\frac{15x}{4}+\frac{15}{8}\right]+c$

3) $-e^{-2x}\left[\frac{x^5}{2}-\frac{5x^4}{2^2}+\frac{20x^3}{2^3}-\frac{60x^2}{2^4}+\frac{120x}{2^5}-\frac{120}{2^6}\right]+c$

4) $e^{-2x}\left[\frac{x^5}{2}+\frac{5x^4}{4}+\frac{5x^3}{2}+\frac{15x^2}{4}+\frac{15x}{4}+\frac{15}{8}\right]+c$

76) $\lim_{n\to\infty}\left[\frac{\sqrt{n^2-1^2}}{n^2}+\frac{\sqrt{n^2-2^2}}{n^2}+\frac{\sqrt{n^2-3^2}}{n^2}+\ldots\text{to } n \text{ terms}\right]=$

1) $\frac{\pi}{4}$ 2) $\frac{\pi}{2}$ 3) $\frac{\pi}{3}$ 4) $\frac{2\pi}{3}$

77)If $\int_3^5 \sqrt{8x-x^2-15}\,dx = P$, then $\sin P + \operatorname{cosec} P =$

1) $\frac{5}{2}$

2)0

3)1

4)2

78)The area(in sq. units) bounded by the curve $x^2+2x+y-3=0$, the X-axis and the tangent at the point where the curve meets the Y- axis is

1) $\frac{7}{10}$

2) $\frac{7}{12}$

3) $\frac{62}{11}$

4) $\frac{5}{11}$

79)The differential equation having the general solution $y = c(x-c)^2$ (c is an arbitrary constant) is

1)$(y')^2 = 4y^2(xy' - 2y)$

2)$(y')^3 = 4y(xy' - 2y)$

3)$(y')^3 = y(x^2y' - y)$

4)$(y')^3 = 2y(xy' + 2y)$

80)The solution of the differential equation $(x+1)\frac{dy}{dx} - xy = 1$, satisfying $y(0) = 1$ is

1)$\frac{1}{(1+x)}(e^x + 1) = y$

2)$\log_e(1+x) + \frac{1}{2} = y$

3)$\left(e^x - \frac{1}{2}\right)\frac{1}{x} = y$

4) $\frac{1}{(1+x)}\left(2e^x - 1\right) = y$

APEAMCET-2018 -- Engineering Stream Final Key Date: 24-04-18 AN (Shift 2)			
1	3	41	1
2	2	42	1
3	3	43	3
4	1	44	1
5	1	45	1
6	2	46	3
7	2	47	3
8	2	48	3
9	1	49	1
10	3	50	3
11	3	51	1
12	4	52	2
13	1	53	2
14	3	54	1
15	3	55	3
16	3	56	1
17	2	57	1
18	3	58	4
19	2	59	2
20	1	60	4
21	2	61	2
22	4	62	4
23	3	63	2
24	1	64	4
25	1	65	4
26	2	66	3
27	3	67	1
28	2	68	3
29	3	69	3
30	3	70	3
31	2	71	3
32	4	72	3
33	1	73	4
34	3	74	1
35	3	75	1
36	3	76	4
37	1	77	3
38	2	78	4
39	4	79	4
40	1	80	4