CUET PG 2017

PART-A

1. Choose the correct homophone for Ascent.
A) Accent
B) Assent
C) Axent
D) Axant

2. Which of the following is an Indian Grammarian?
A) Bhash
B) Bharata
C) Panini
D) Prakasam

3. Find the correct expression.
A) Between you and I
B) Between you and me
C) Between you and my
D) Between you and mine

4. Pair with harp from the following.
A) on
B) at
C) upon
D) in

5. Who is the Indian Nobel Laureate for Literature?
A) Jatin Kumar Naik
B) Hargobind Khurana
C) Rabindranath Tagore
D) Mother Teresa

6. Who among the following wrote The Jungle Book?
A) Mark Twaine
B) R.K. Narayan
C) Rudyard Kipling
D) Rabindranath Tagore

7. Fill appropriate preposition in the blank:
The bread is made_____ wheat flour.
A) of
B) from
C) in

D) on

8. Find the appropriate homonym for Altar.
A) Alter
B) Altor
C) Altur
D) Altair

9. A Simile is a
A) Contrast
B) Parallel
C) Combination
D) Comparison

10. Find the correct idiom.
A) Better safe than sad
B) Better safe than serious
C) Better safe than sorry
D) Better safe than regretful

11. A can do a piece of work in 80 days. He works at it for 10 days and then B alone finishes the remaining work in 42 days. In how much time will A and B working together, finish the work?
A) 40 days
B) 35 days
C) 50 days
D) 30 days

12. Choose the missing term out of the given alternatives Y, W, U, S, Q, ?, ?
A) M, L
B) J, R
C) L, M
D) O, M

13. In a certain language, PEN is written as QDM, then how BOOK will be written in that code?
A) CMJN
B) CNNJ
C) CNLS
D) NMJP

14. After deducting a commission of 5%, a T.V. set costs Rs.9595. Its marked price is
A) Rs.10,000
B) Rs.10,075
C) Rs.10,100
D) Rs.10,500

15. At what rate percent per annum will a sum of money double in 16 years?
A) 6.25% p.a.
B) 6.00% p.a.
C) 6.75% p.a.
D) 6.50% p.a.

16. In a exam two papers maths and chemistry, 60% of the students pass in maths and 70% pass in chemistry. What is minimum percentage of students who could failed in both the subjects?
A) 0%
B) 30%
C) 40%
D) None of these

17. B, the son of A was married to C, whose sister D was married to E, the brother of B. How D is related to A?
A) Sister
B) Daughter-in-law
C) Sister-in-law
D) Cousin

18. Statements:
I. The farmers have decided against selling their Kharif crops to the Government agencies.
II. The Government has reduced the procurement price of Kharif crops starting from the last month to the next six months.
A) Statement I is the cause and statement II is its effect
B) Statement II is the cause and statement I is its effect
C) Both the statements I and II are independent causes
D) Both the statements I and II are effects of independent causes

19. Indiscreet is related to imprudent in the same way as Indisposed is related to
A) Concerned
B) Crucial
C) Clear
D) Reluctant

20. Rangaswamy Cup is associated with
A) Archery
B) Cricket
C) Football
D) Hockey

21. Who is the father of Geometry?
A) Aristotle
B) Euclid

C) Pythagoras
D) Kepler

22. Shivaji's war strategy used against the Mughals was
A) Alert Army
B) Political Supremacy
C) Large Army
D) Guerilla Warfare

23. Marginal utility, a consumer derives from a good, is
A) Change in his total utility as a result of adding one unit to his stock of a good
B) Utility derived from a particular good
C) Change in utility derived as a result of a change in the price of a good
D) Change in his total utility when he buys extra units of a good

24: Joint Military Exercise Nomadic Elephant 2017 is being held between India and
A) Vietnam
B) Mongolia
C) Sri Lanka
D) Thailand

25. $1014 \times 986 = ?$
A) 998804
B) 998814
C) 998904
D) 999804

PART-B

26. The solution of the differential equation $\frac{dy}{dx} = \frac{1-x}{y}$ represents a family of
A) circle with centre at (1,0)
B) circle with centre at (0, 0)
C) circle with centre at (-1,0)
D) straight line with slope -1

27. Suppose $\alpha = \lim_{(x,y)\to(0,0)} \frac{\sin(x^2+y^2)}{x^2+y^2}$; $\beta = \lim_{(x,y)\to(0,0)} \frac{x^2-y^2}{x^2+y^2}$ then which of the following statements is true?
A) α exists but β does not exist
B) α does not exist but β exists
C) α, β do not exist
D) both α, β exist

28. The set $U = \left\{x \in R: \sin x = \frac{1}{2}\right\}$ is

A) open

B) closed

C) both open and closed

D) neither open nor closed

29. Let $\{a_n\}$ and $\{b_n\}$ be sequences of real numbers defined as $a_1 = 1$ and for $n \geq 1$, $a_{n+1} = a_n + (-1)^n 2^{-n}, b_n = \frac{2a_{n+1} - a_n}{a_n}$. Then

A) $\{a_n\}$ converges to zero and $\{b_n\}$ is a Cauchy sequence

B) $\{a_n\}$ converges to a non-zero number and $\{b_n\}$ is a Cauchy sequence t

C) $\{a_n\}$ converges to zero and $\{b_n\}$ is not a convergent sequence

D) $\{a_n\}$ converges to a non-zero number and $\{b_n\}$ is not a convergent sequence

30. The matrix equation $AX = B$ has a unique non-zero solution if

A) A is singular

B) A is non-singular

C) A is non-singular and B is not a null matrix

D) A is non-singular and B is a null matrix

31. The sequence $\{(-1)^n\}_{n=1}^{\infty}$ is

A) bounded and convergent

B) convergent and unbounded

C) bounded and divergent

D) divergent and unbounded

32. If sequences of real numbers $\{a_n\}_{n=1}^{\infty}, \{b_n\}_{n=1}^{\infty}$ and $\{c_n\}_{n=1}^{\infty}$ are such that, $b_n = a_{2n}$ and $c_n = a_{2n+1}$, then $\{a_n\}_{n=1}^{\infty}$ is convergent implies

A) $\{b_n\}_{n=1}^{\infty}$ is convergent but $\{c_n\}_{n=1}^{\infty}$ need not be convergent

B) $\{c_n\}_{n=1}^{\infty}$ is convergent but $\{b_n\}_{n=1}^{\infty}$ need not be convergent

C) both $\{b_n\}_{n=1}^{\infty}$ and $\{c_n\}_{n=1}^{\infty}$ are convergent

D) both $\{b_n\}_{n=1}^{\infty}$ and $\{c_n\}_{n=1}^{\infty}$ are divergent

33. Consider the statements

a. The series $\sum \sin \frac{1}{n}$ is convergent

b. The series $\frac{1.2}{3^2.4^2} + \frac{3.4}{5^2.6^2} + \frac{5.6}{7^2.8^2} + \cdots$ is convergent.

Then

A) both the statements (a) and (b) are true

B) (a) is true and (b) is false

C) (a) is false and (b) is true

D) neither (a) nor (b) is true

34. The series $x - \frac{x^2}{2} + \frac{x^3}{3} - \frac{x^4}{4} + \cdots$ is convergent for

A) all real values of x
B) $|x| < 1$ only
C) $|x| < 1$
D) $-1 < x < 1$

35. $\lim_{n\to\infty}(2^n + 3^n)$ is equal to
A) 2
B) 3
C) 5
D) 6

36. The value of $\iiint xyzdxdydz$ over the domain bounded by $x = 0, y = 0, z = 0, x + y + z = 1$ is
A) $\frac{1}{360}$
B) 360
C) $\frac{1}{720}$
D) 720

37. The value of the integral $\int_{-1}^{1} \frac{|x|}{x} dx$ is equal to
A) 2
B) 1
C) $\frac{1}{2}$
D) 0

38. The integral $\int_0^{\pi} xF(\sin x)dx$ is equal to
A) $\frac{\pi}{4}\int_0^{\pi} F(\sin x)dx$
B) $\frac{\pi}{2}\int_0^{\pi} F(\sin x)dx$
C) $\pi\int_0^{\pi} F(\sin x)dx$
D) $\int_0^{\pi} F(\sin x)dx$

39. If G is a group and H is a subgroup of index 2 in G, then which of the following is a correct statement?
A) H is a normal subgroup of G
B) H is not a normal subgroup of G
C) H is a subgroup of G
D) None of these

40. If $a, b \in G$, where G is a group of order m, then order of ab and ba are
A) equal to m
B) same

C) unequal
D) not defined

41. Which amongst the following statements is not true?
A) A sequence cannot converge to more than one limit,
B) Every convergent sequence is bounded
C) Every bounded sequence is convergent
D) Limit of a convergent sequence is unique

42. If $u_n = \sqrt{n+1} - \sqrt{n}$ and $v_n = \sqrt{n^4+1} - n^2$, then
A) $\sum_{n=1}^{\infty} u_n$ converges but $\sum_{n=1}^{\infty} v_n$ diverges
B) $\sum_{n=1}^{\infty} u_n$ diverges but $\sum_{n=1}^{\infty} v_n$ converges
C) $\sum_{n=1}^{\infty} u_n$ and $\sum_{n=1}^{\infty} v_n$ both converges
D) $\sum_{n=1}^{\infty} u_n$ and $\sum_{n=1}^{\infty} v_n$ both diverges

43. The sequence $a_n = \frac{1}{n^2} + \frac{1}{(n+1)^2} + \cdots + \frac{1}{(2n)^2}$
A) converges to 0
B) converges to $\frac{1}{2}$
C) converges to $\frac{1}{4}$
D) does not converge

44. Let $a_n = \sin\frac{1}{n^2}, n = 1,2, \ldots$, then
A) $\lim_{n\to\infty} a_n = 1$
B) $\sum_{n=1}^{\infty} a_n$ converges
C) $\lim_{n\to\infty} \sup a_n \neq \lim_{n\to\infty} inf\ a_n$
D) $\sum_{n=1}^{\infty} a_n$ diverges

45. The derivative of a periodic function with period t is
A) a constant function
B) a periodic function with period t
C) a non-periodic function
D) none of the above

46. Let A and B be any $n \times n$ real matrices, then which of the following statements is true?
A) $rank\ (A + B) = rank\ (A) + rank\ (B)$
B) $rank\ (A + B) \leq rank\ (A) + rank\ (B)$
C) $rank\ (A + B) = rank\ (A).rank\ (B)$
D) $rank\ (A + B) \geq rank\ (A) + rank\ (B)$

47. If $E = \{e^{2x}, e^{3x}\}, x \in R$ then the set E is
A) linearly independent over R

B) linearly dependent over R
C) linearly independent over any interval (a, b), only when 0 does not belong to (a, b)
D) none of the above

48. Which one of the following statements is correct?
A) There is no vector space of dimension 1
B) Any three vectors of a vector space of dimension 3 are linearly independent
C) There is one and only one basis of a vector space of finite dimension
D) If a non-zero vector space V is generated by a finite set S, then V can be generated b a linearly independent subset of S

49. If $V_1 = (1, 2, 0, 3, 0), V_2 = (1, 2, -1, -1, 0), V_3 = (0, 0, 1, 4, 0), V_4 = (2, 4, 1, 0, 1)$ and $V_5 = (0, 0, 0, 0, 1)$, then the dimension of the linear span of $\{V_1, V_2, V_3, V_4, V_5\}$ is
A) 2
B) 3
C) 4
D) 5

50. The dimension of the vector space $V = \{A = (a_{ij})_{m\times n} : a_{ij} \in \mathbb{C}, a_{ij} = -a_{ij}\}$ is
A) n^2
B) $n^2 - 1$
C) $\frac{n^2-n}{2}$
D) $\frac{n^2}{2}$

51. Using Rolle's theorem, the equation $a_0x^n + a_1x^{n-1} + \cdots + a_n = 0$ has atleast one root between 0 and 1, if
A) $\frac{a_0}{n} + \frac{a_1}{n-1} + \cdots + a_{n-1} = 0$
B) $\frac{a_0}{n-1} + \frac{a_1}{n-2} + \cdots + a_{n-2} = 0$
C) $\frac{a_0}{n+1} + \frac{a_1}{n} + \cdots + a_n = 0$
D) $na_0 + (n-1)a_1 + \cdots + a_{n-1} = 0$

52. $\lim_{x\to 0} \frac{(1+x)^{\frac{1}{2}} - e + \frac{1}{2}ex}{x^2}$ is equal to
A) $\frac{24}{11}e$
B) $\frac{11}{24}e$
C) $\frac{1}{11}e$
D) $\frac{1}{24}e$

53. A monotonic function
A) is always continuous

B) is continuous only, if it satisfies intermediate value property
C) can be nowhere continuous
D) can be discontinuous at infinitely many points

54. The set of points where $f(x) = |sinx|$ is not differentiable is
A) empty
B) {0}
C) $\{k\pi; k \in \mathbb{Z}\}$
D) $\left\{\frac{k\pi}{2}; k \in \mathbb{Z}\right\}$

55. Let $P_n(x)$ be a Taylor's polynomial of degree $n \geq 0$ for the function e^x about 0. Then, the error in this approximation is
(A) $\frac{x^n}{n!}e^t$ for some $t, 0 < t < x$
B) $\frac{x^n}{(n+1)!}e^t$ for some $t, 0 < t < x$
C) $\frac{x^{n+1}}{n!}e^t$ for some $t, 0 < t < x$
D) $\frac{x^{n+1}}{(n+1)!}e^t$ for some $t, 0 < t < x$

56. Consider the matrix $M = \begin{bmatrix} 0 & 1 & 2 & 0 \\ 1 & 0 & 1 & 0 \\ 2 & 1 & 0 & 2 \\ 0 & 0 & 2 & 0 \end{bmatrix}$ then
A) M has no real eigen values
B) All real eigen values of M are positive
C) All real eigen values of M are negative
D) M has both positive and negative real eigen values

57. If the nullity of the matrix $\begin{bmatrix} k & 1 & 2 \\ 1 & -1 & -2 \\ 1 & 1 & 4 \end{bmatrix}$ is 1, then the value of k is
A) -1
B) 0
C) 1
D) 2

58. Let $M = \begin{bmatrix} 4 & 2 & 1 & 3 \\ 6 & 3 & 4 & 7 \\ 2 & 1 & 0 & 1 \end{bmatrix}$ then the rank of M is
A) 4
B) 3
C) 2
D) 1

59. Following system of linear equations
$x + 4y + 3z = 0$
$x + 3y + 4z = 0$
$x + 2y + 5z = 0$ does have
A) no solution
B) infinitely many solutions

C) more than one but finitely many solutions
D) exactly one solution

60. Let A be a 3×3 complex matrix, whose characteristic polynomial is given by $f(t) = t^3 + c_2t^2 + c_1t + c_0$, then
A) $det(A) = c_2$
B) $det(A) = c_0$
C) $det(A) = -c_2$
D) $det(A) = -c_0$

61. For the function $f: R^2 \to R$ defined by $f(x, y) = x^3 + y^3 - 3x - 12y + 20$, which of the following is true?
A) f has maximum at (1, 2)
B) f has minimum at (-1,-2)
C) f has maximum at (1, 2) and minimum at (-1, -2)
D) The saddle points of f are (-1, 2) and (1, −2)

62. $\int \sqrt{1 + 2tan\, x(tanx + secx)}\, dx$ is equal to
A) $-log(1 + sinx) + c$
B) $log(1 - sinx) + c$
C) $-log(1 - sinx) + c$
D) $log\,(1 + sinx) + c$

63. The value of $\int_0^\infty log\left(x + \frac{1}{x}\right)\frac{dx}{1+x^2}$ is
A) 0
B) ∞
C) $log\ 2$
D) $\pi \log 2$

64. If $I_n = \int_0^{\pi/4} \tan^n x\, dx$ then
A) $I_n - I_{n-2} = \frac{1}{n-1}$
B) $I_n + I_{n+2} = \frac{1}{n-1}$
C) $I_n + I_{n-2} = \frac{1}{n}$
D) $I_n - I_{n-2} = \frac{1}{n-2}$

65. If $E = \{(x, y) \in R^2 : 0 \leq x \leq 1, 0 \leq y \leq x\}$, then the value of $\iint_B (x + y)dx\,dy$ is equal to

A) -1

B) 0

C) 1

D) 1/2

66. If $f(x) = (x + |x|)\,|x|$, for all $x \in R$, then which of the following is incorrect?

A) f is continuous

B) f is not differentiable for some x

C) f' is continuous

D) f' is differentiable

67. The Maclaurin's expansion of $\tan x$ in powers of x is valid in the interval

A) $(-\infty, \infty)$

B) $\left(-\frac{3\pi}{2}, \frac{3\pi}{2}\right)$

C) $(-\pi, \pi)$

D) $\left(-\frac{\pi}{2}, \frac{\pi}{2}\right)$

68. Consider the function $f: R^2 \to R$ of two variables defined by

$$f(x, y) = \frac{xy}{x^2 + y^2}, x^2 + y^2 \neq 0$$
$$0, x^2 + y^2 = 0$$

Determine which one of the following facts about f is true.

A) f is continuous at (0, 0)

B) f has removable discontinuity at (0, 0)

C) f is not differentiable at (0, 0)

D) none of the above

69. If $f: R^2 \to R$ be defined by $f(x, y) = x^2 + y^2$ if x and y are rational

O otherwise

then which of the following statements is true?

A) f is not continuous at (0, 0)

B) f is continuous at (0, 0) but not differentiable at (0, 0)

C) f is differentiable only at (0, 0)

D) f is differentiable everywhere

70. Consider the function $f: R^2 \to R$ defined by $f(x, y) = x^y$. Determine which of the following is true for f.

A) $f_x(a, 0) = 0$ for any constant a

B) $f_y(e, 0) = 0$

C) $f_{xy}(1, 0) = 0$

D) $f_{yx}(1, 1) = 1$

71. The number of elements of order 5 in a symmetric group S_5 is
A) 5
B) 20
C) 24
D) 12

72. The set M of square matrices (of same order) with respect to matrix multiplication is
A) group
B) semi-group
C) monoid
D) rank

73. The number of generators in a cyclic group of order 10 are
A) 1
B) 2
C) 3
D) 4

74. The dimension of the vector space of all 3×3 real symmetric matrices is
A) 3
B) 4
C) 6
D) 9

75. If U is a 3×3 complex Hermitian matrix, which is unitary, then the distinct eigen values of U are
A) $i, -i$
B) $1+i, 1-i$
C) $1, -1$
D) $\frac{1+i}{2}, \frac{1-i}{2}$

76. If E is a connected subset of R with atleast two elements, then the number of elements in E is
A) exactly two
B) more than two but finite
C) countably infinite
D) uncountable

77. Define $f: R^2 \rightarrow R$ by $f(x,y) = 1$ if $xy = 0$
2 otherwise.
If $S = \{(x,y): f$ is continuous at the point $(x,y)\}$, then
A) S is open
B) $S = \varphi$

C) S is connected
D) S is closed

78. Let Q be the set of rational numbers and E be the set of all rationals p, such that $2 < p^2 < 3$, then E is
A) closed and bounded in Q
B) closed and unbounded in Q
C) not compact in Q
D) compact in Q

79. Consider the following subsets of $\mathbb{R}$
$E = \left\{\frac{n}{n+1} : n \in \mathbb{N}\right\}, \mathbb{F} = \left\{\frac{n}{x+1} : 0 \leq x \leq 1\right\}$, then
A) Both E and F are closed
B) E is closed and F is not closed
C) E is not closed and F is closed
D) Neither E nor F is closed

80. If G is a cyclic group of order 8, then the order of the group of automorphisms of G is
A) 2
B) 4
C) 6
D) 8

81. $\int_0^{\pi/2} \frac{\sin^{3/2} x}{\sin^{3/2} x + \cos^{3/2} x} dx$ is equal to
A) 0
B) 1
C) $\pi/4$
D) $\pi/2$

82. The entire length of the curve whose equation is $x^{2/3} + y^{2/3} = r^{2/3}$ is equal to
A) $\frac{3}{2}r$
B) $2\sqrt{3}$
C) $6r$
D) none of these

83. The value of $\int_0^{\infty} \int_{1/y}^{\infty} x^4 e^{-x^3 y} dx\, dy$ is equal to
A) 1/4
B) 1/3
C) 1/2
D) 1

84. Which of the following is not an integrating factor of the differential equation $dy - y\,dx = 0$?
A) $\frac{1}{x^2}$

B) $\frac{1}{x^2+y^2}$
C) $\frac{1}{xy}$
D) $\frac{x}{y}$

85. The orthogonal trajectory to the family of circles $x^2 + y^2 = 2cx$ (c arbitrary) is described by the differential equation
A) $(x^2 + y^2)y' = 2xy$
B) $(x^2 - y^2)y' = 2xy$
C) $(y^2 - x^2)y' = xy$
D) $(y^2 - x^2)y' = 2xy$

86. The maximum magnitude of the directional derivative for the surface $x^2 + xy + yz = 9$ at the point (1, 2, 3) is along the direction
A) $i + j + k$
B) $2i + 2j + k$
C) $i + 2j + 3k$
D) $i - 2j + 3k$

87. If $\vec{F}$ is such that $\nabla \times \vec{F} = 0$, then $\vec{F}$ is called
A) rotational
B) irrotational
C) solenoidal
D) rotational and solenoidal

88. From the following, what is the value of $\int_C \vec{F}.\overrightarrow{dr}$, where $\vec{F} = 2x^2y\hat{\imath} + 3xy\hat{\jmath}$ and C is $y = 4x^2$ in the plane from (0,0) to (1, 4)?
A) $\frac{104}{9}$
B) $\frac{104}{7}$
C) $\frac{104}{3}$
D) $\frac{104}{5}$

89. What from the following is the directional derivative of $\varphi = 5x^2y - 5y^2z + 2.5z^2x$ at the point (1, 1, 1) in the direction of the line $\frac{x-1}{2} = \frac{y-3}{-2} = z$?
A) $\frac{11}{3}$
B) $\frac{11}{2}$
C) $11\frac{2}{3}$
D) $\frac{2}{3}$

90. If x, y and z are positive real numbers, then the minimum value of $x^2 + 8y^2 + 27z^2$,where $\frac{1}{x} + \frac{1}{y} + \frac{1}{z} = 1$ is

A) 108

B) 216

C) 405

D) 1048

91. Which one of the following differential equations represent all circles with radius a?

A) $1 + \left(\frac{dy}{dx}\right)^2 + \sqrt{a^2 + x^2}\frac{d^2y}{dx^2} = 0$

B) $1 + \left(\frac{dy}{dx}\right)^2 + \sqrt{a^2 + y^2}\frac{d^2y}{dx^2} = 0$

C) $\left[1 + \left(\frac{dy}{dx}\right)^2\right]^3 + a^2\left(\frac{d^2y}{dx^2}\right)^2 = 0$

D) $\left[1 + \left(\frac{dy}{dx}\right)^2\right]^3 - a^2\left(\frac{d^2y}{dx^2}\right)^2 = 0$

92. The solution $y(x)$ of the differential equation $(D^2 + 4D + 4)y = 0$ satisfying the conditions $y(0) = 4, y'(0) = 8$ is

A) $4e^{2x}$

B) $(16x + 4)e^{-2x}$

C) $4e^{-2x} + 16x$

D) $4e^{-2x} + 16x4e^{2x}$

93. An integrating factor for the differential equation $(cos\, y\, sin\, 2x)dx + (\cos^2 y - \cos^2 x)dy = 0$ is

A) $\sec^2 y + secytany$

B) $\tan^2 y + secytany$

C) $\frac{1}{sec^2 y + secytany}$

D) $\frac{1}{tan^2 y + secytany}$

94. If c is an arbitrary constant, then the general solution of the differential equation $\frac{dy}{dx} - tanxtany = cosxsecy$ is

A) $2siny = (x + c - sinx\, cosx)secx$

B) $cosy = (x + c)sinx$

C) $secy = (x + c)cosx$

D) $siny = (x + c)cosx$

95. The maximum value of $f(x, y, z) = xyz$ along all points lying on the intersection of the planes $x + y + z = 40$ and $z = x + y$ is

A) 4000

B) 3000

C) 2000

D) 1000

96. The differential equation $\frac{dy}{dx} = k(a-y)(b-y)$ when solved with the condition $y(0) = 0$, fields the result

A) $\frac{b(a-y)}{a(b-y)} = e^{(a-b)kx}$

B) $\frac{b(a-x)}{a(b-x)} = e^{(a-b)ky}$

C) $\frac{a(b-y)}{b(a-y)} = e^{(a-b)kx}$

D) $xy = ke$

97. Solving by variation of parameter the differential equation $y" - 2y' + y' = e^x \log_x$ the value of Wronskian W is

A) e^{2x}

B) 2

C) e^{-2x}

D) e

98. The differential equation $2y\,dx - (3y - 2x)dy = 0$

A) exact and homogeneous but not linear

B) homogeneous and linear but not exact

C) exact and linear but not homogeneous

D) exact, homogeneous and linear

99. The differential equation $(axy^3 + y\,cos\,x)dx + (x^2y^2 + \beta sinx)\,dy = 0$ is exact for the values of α and β such that

A) $\alpha = \frac{3}{2}, \beta = 1$

B) $\alpha = 1, \beta = \frac{3}{2}$

C) $\alpha = \frac{2}{3}, \beta = 1$

D) $\alpha = 1, \beta = \frac{2}{3}$

100. The particular solution of the equation $y' \sin x = y\,log$ satisfying the initial condition $y(\pi/2) = e$, is

A) $e^{\tan(x/2)}$

B) $e^{\cot(x/2)}$

C) $log\ tan\ (x/2)$

D) $log\ cot\ (x/2)$

CUET PG 2017

Answer Key				
Q.No./Ans	**Q.No./Ans**	**Q.No./Ans**	**Q.No./Ans**	**Q.No./Ans**
1 B	21 B	41 C	61 D	81 C
2 C	22 D	42 B	62 C	82 C
3 B	23 A	43 A	63 D	83 C
4 A	24 B	44 B	64 *	84 D
5 C	25 D	45 B	65 D	85 B
6 C	26 A	46 B	66 D	86 B
7 B	27 A	47 C	67 D	87 B
8 A	28 B	48 D	68 C	88 D
9 D	29 B	49 B	69 B	89 C
10 C	30 C	50 C	70 A or D	90 B
11 D	31 C	51 C	71 C	91 D
12 D	32 C	52 *	72 B or C	92 B
13 B	33 C	53 B	73 D	93 A
14 C	34 D	54 C	74 C	94 D
15 A	35 *	55 A	75 C	95 C
16 A	36 C	56 D	76 D	96 A
17 B	37 D	57 A	77 A	97 A
18 B	38 B	58 C	78 D	98 D
19 D	39 A	59 B	79 D	99 C
20 D	40 B	60 D	80 B	100 A

CUET PG 2017