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Roll No. _____

Question Booklet Number

O.M.R. Serial No. :

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BCA II Semester (NEP Back Paper)

Examination, 2025-26

Mathematics-II

Paper Code						
B	C	A	2	0	0	5

Question Booklet Series

C

Time : 1 : 30 Hours]

[Maximum Marks : 75

Instructions to the Examinee :

1. Do not open the booklet unless you are asked to do so.
2. The booklet contains 100 questions. Examinee is required to answer 75 questions in the OMR Answer-Sheet provided and not in the question booklet. **All** questions carry equal marks.
3. Examine the Booklet and the OMR Answer-Sheet very carefully before you proceed. Faulty question booklet due to missing or duplicate pages/questions or having any other discrepancy should be got immediately replaced.
4. Four alternative answers are mentioned for each question as – A, B, C & D in the booklet. The candidate has to choose the correct answer and mark the same in the OMR Answer-Sheet as per the direction :

(Remaining instructions on the last page)

परीक्षार्थियों के लिए निर्देश :

1. प्रश्न-पुस्तिका को तब तक न खोलें जब तक आपसे कहा न जाए।
2. प्रश्न-पुस्तिका में 100 प्रश्न हैं। परीक्षार्थी को 75 प्रश्नों को केवल दी गई OMR आन्सर-शीट पर ही हल करना है, प्रश्न-पुस्तिका पर नहीं। **सभी** प्रश्नों के अंक समान हैं।
3. प्रश्नों के उत्तर अंकित करने से पूर्व प्रश्न-पुस्तिका तथा OMR आन्सर-शीट को सावधानीपूर्वक देख लें। दोषपूर्ण प्रश्न-पुस्तिका जिसमें कुछ भाग छपने से छूट गये हों या प्रश्न एक से अधिक बार छप गए हों या उसमें किसी अन्य प्रकार की कमी हो, तो उसे तुरन्त बदल लें।
4. प्रश्न-पुस्तिका में प्रत्येक प्रश्न के चार सम्भावित उत्तर- A, B, C तथा D हैं। परीक्षार्थी को उन चारों विकल्पों में से सही उत्तर छँटना है। उत्तर को OMR उत्तर-पत्रक में सम्बन्धित प्रश्न संख्या में निम्न प्रकार भरना है :

(शेष निर्देश अन्तिम पृष्ठ पर)

Rough Work
रफ़ कार्य

1. The double integral $\int_0^\infty \int_0^\infty e^{-(x^2+y^2)} dx dy$ is easier to solve using :

- (A) Cartesian Coordinates
- (B) Polar Coordinates
- (C) Integration by parts
- (D) Partial Fractions

2. If we change $x=u+v$ and $y=u-v$, the Jacobian J is:

- (A) 2
- (B) -2
- (C) 1
- (D) 0

3. The region of integration for $\int_0^1 \int_0^{\sqrt{1-x^2}} xf(x,y) dy dx$ is a :

- (A) Circle
- (B) Quadrant of a circle
- (C) Semicircle
- (D) Square

4. Evaluate $\int_0^2 \int_0^y x dx dy$:

- (A) 4/3
- (B) 2/3
- (C) 2
- (D) 4

5. The volume of a sphere of radius a can be found using the triple integral of 1 with limits in spherical coordinates.

In Cartesian coordinates, the volume of a cube with side a is:

- (A) $\int_0^a \int_0^a \int_0^a dx dy dz$
- (B) a^2
- (C) a^4
- (D) $3a$

6. For a double integral $\int_a^b \int_c^d f(x)g(y) dy dx$, if the limits are constants, it can be written as:

- (A) $\int_a^b f(x) dx \int_c^d g(y) dy$
- (B) $\int_a^b f(x) dx + \int_c^d g(y) dy$
- (C) $\int_a^b f(x)g(y) dx$
- (D) It cannot be simplified

7. Evaluate $\int_0^1 \int_{-1}^{1-x} dy dx$:

- (A) 1
- (B) -0.5
- (C) 0.25
- (D) 2

8. A triple integral $\int \int \int V \, dV$ represents the:

- (A) Mass of the solid
- (B) Surface area of the solid
- (C) Volume of the solid
- (D) Density of the solid

9. The value of $\int_0^2 \int_{-1}^2 xy^2 \, dy \, dx$ is:

- (A) 14/3
- (B) 7/3
- (C) 2
- (D) 4

10. To find the area of a circle $x^2+y^2=a^2$ using double integration in polar coordinates, the limits for r and θ are:

- (A) $r: 0$ to a , $\theta; 0$ to π
- (B) $r: 0$ to a , $\theta; 0$ to 2π
- (C) $r: -a$ to a , $\theta; 0$ to 2π
- (D) $r: 0$ to a^2 , $\theta; 0$ to 2π

11. The Jacobian $J = \frac{\partial(x,y)}{\partial(r,\theta)}$ for the transformation $x=r \cos \theta$, $y=r \sin \theta$

is:

- (A) 1
- (B) r
- (C) r^2
- (D) $r \cos \theta$

12. Evaluate the double integral

$$\int_0^1 \int_0^x x + y \, dx \, dy .$$

- (A) 1/2
- (B) 1/3
- (C) 1/4
- (D) 2/3

13. $\int_0^1 x(1-x)^9 \, dx :$

- (A) 1/110
- (B) 1/132
- (C) 1/148
- (D) 1/140

14. Evaluate $\int_0^1 \int_0^1 \int_0^1 dx \, dy \, dz .$

- (A) 3
- (B) 1
- (C) 0
- (D) 0.5

15. The volume of a solid bounded by a surface $z=f(x,y)$ over a region R is:

(A) $\int_R f(x,y) dx dy$

(B) $\int_R dx dy$

(C) $\int_R \int_R \int_R dz dy dx$

(D) Both (A) and (C) are valid

16. Evaluate the integral $\int_0^\pi \int_0^a r dr d\theta$:

(A) πa^2

(B) $\frac{\pi a^2}{2}$

(C) $\frac{2}{\pi} a$

(D) πa

17. When changing the order of integration for $\int_0^1 \int_0^x f(x,y) dx dy$, the new limits for x are:

(A) 0 to 1

(B) y to 1

(C) 0 to y

(D) y to x

18. In polar coordinates, the area element $dA=dx dy$ is transformed into:

(A) $dr d\theta$

(B) $r dr d\theta$

(C) $r^2 dr d\theta$

(D) $r \sin \theta dr d\theta$

19. The area of a region R in the xy-plane is given by:

(A) $\int_R dx dy$

(B) $\int_R xy dx dy$

(C) $\int_R (x + y) dx dy$

(D) $\int_R xy dx/dy$

20. Evaluate the double integral

$\int_0^1 \int_0^2 dx dy$:

(A) 1

(B) 2

(C) 3

(D) 0.5

21. For $z = \tan^{-1} \frac{y}{x}$, find $\frac{\partial z}{\partial x}$.

(A) $\frac{1}{x^2 + y^2}$

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

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

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

22. The condition for the function $f(x,y)$ to be stationary at (a,b) is:

- (A) $\frac{\partial f}{\partial x}(a,b) = 0, \frac{\partial f}{\partial y}(a,b) = 0$
- (B) $\frac{\partial^2 f}{\partial x^2} > 0$
- (C) $\frac{\partial^2 f}{\partial x \partial y} = \frac{\partial^2 f}{\partial y \partial x}$
- (D) $f(a,b)=0$

23. If $u=x^y$, then $\frac{\partial u}{\partial y}$ is:

- (A) $y x^{y-1}$
- (B) $x^y \log x$
- (C) x^y
- (D) $y \log x$

24. If $x=r \cos \theta$ and $y=r \sin \theta$, then $\frac{\partial r}{\partial x}$ is:

- (A) $\cos \theta$
- (B) $\sin \theta$
- (C) 1
- (D) $\frac{x}{r}$

25. If $(x,y)=x^4+y^4$, the point $(0,0)$ results in $rt-s^2=0$. This test is:

- (A) Indicative of a maximum
- (B) Indicative of a minimum
- (C) Inconclusive
- (D) Indicative of a saddle point

26. A point where $\frac{\partial f}{\partial x} = 0$ and $\frac{\partial f}{\partial y} = 0$

but the function has neither a maximum nor a minimum is a:

- (A) Extreme point
- (B) Saddle point
- (C) Node
- (D) Boundary point

27. The function $f(x,y) = \frac{x}{y}$ is homogeneous of degree:

- (A) 1
- (B) -1
- (C) 0
- (D) Infinite

28. If $f(x,y)=e^{xy}$, find $\frac{\partial f}{\partial y}$.

- (A) e^{xy}
- (B) $y e^{xy}$
- (C) $x e^{xy}$
- (D) $xy e^{xy}$

29. The total differential df for a function of two variables $f(x,y)$ is defined as:

- (A) $\frac{\partial f}{\partial x} dx + \frac{\partial f}{\partial y} dy$
- (B) $\frac{\partial f}{\partial x} + \frac{\partial f}{\partial y}$
- (C) $\frac{\partial^2 f}{\partial x^2} + \frac{\partial^2 f}{\partial y^2}$
- (D) $\frac{\partial f}{\partial x} dy + \frac{\partial f}{\partial y} dx$

30. For the function $u = \log(x^2 + y^2)$, calculate the value of $x \frac{\partial u}{\partial x} + y \frac{\partial u}{\partial y}$.

- (A) u
- (B) 2
- (C) 1
- (D) $2u$

31. If $u = f(x,y)$ is a homogeneous function of degree n , then

$$x^2 \frac{\partial^2 f}{\partial x^2} + 2xy \frac{\partial^2 u}{\partial x \partial y} + y^2 \frac{\partial^2 u}{\partial y^2} \text{ is:}$$

- (A) $n(n-1)u$
- (B) nu
- (C) $(n-1)u$
- (D) n^2u

32. Find the degree of the homogeneous function $f(x,y) = \sqrt{x^2 + y^2}$:

- (A) 2
- (B) 0
- (C) 1
- (D) 0.5

33. The Chain Rule for $z = f(x,y)$ where $x = g(t)$ and $y = h(t)$ is given by $\frac{dz}{dt}$:

- (A) $\frac{\partial z}{\partial x} \frac{dx}{dt} + \frac{\partial z}{\partial y} \frac{dy}{dt}$
- (B) $\frac{\partial z}{\partial x} + \frac{\partial z}{\partial y}$
- (C) $\frac{\partial z}{\partial x} \frac{dy}{dt}$
- (D) $\frac{dx}{dt} \frac{dy}{dt}$

34. If $rt - s^2 < 0$ at a critical point, the point is classified as a:

- (A) Local Minimum
- (B) Local Maximum
- (C) Saddle Point
- (D) Stationary Point

35. Let $r = \frac{\partial^2 f}{\partial x^2}$, $s = \frac{\partial^2 f}{\partial x \partial y}$, $t = \frac{\partial^2 f}{\partial y^2}$. At a critical point, if $rt - s^2 > 0$ and $r > 0$, the function has a:

- (A) Local Maximum
- (B) Local Minimum
- (C) Saddle Point
- (D) Point of Inflection

36. To find the critical points of $f(x,y)$ we must solve the system of equations:
- (A) $\frac{\partial f}{\partial x} = 0$ and $\frac{\partial f}{\partial y} = 0$
- (B) $\frac{\partial f}{\partial x} = \frac{\partial f}{\partial y}$
- (C) $\frac{\partial^2 f}{\partial x^2} = 0$
- (D) $\frac{\partial^2 f}{\partial x \partial y} = 0$
37. A function $f(x,y)$ is homogeneous of degree n if $f(tx,ty) = t^n f(x,y)$. What the degree is of $f(x,y) = \frac{x^3 + y^3}{x-y}$.
- (A) 3
- (B) 2
- (C) 1
- (D) 4
38. According to Euler's Theorem, if $f(x,y)$ is a homogeneous function of degree n , then $x \frac{\partial f}{\partial x} + y \frac{\partial f}{\partial y}$ equals:
- (A) $f(x,y)$
- (B) $n^2 f(x,y)$
- (C) $nf(x,y)$
- (D) 0
39. For $f(x,y) = \sin(x+y)$, the second-order partial derivative $\frac{\partial^2 f}{\partial x \partial y}$ is:
- (A) $\cos(x+y)$
- (B) $-\sin(x+y)$
- (C) $-\cos(x+y)$
- (D) $\sin(x+y)$
40. If $f(x,y) = x^2y + 5y^3$, find the partial derivative $\frac{\partial f}{\partial x}$:
- (A) $2xy$
- (B) $x^2 + 15y^2$
- (C) $2xy + 15y^2$
- (D) $2x$
41. In the lattice of divisors of 12, the value of $4 \vee 6$ is
- (A) 2
- (B) 12
- (C) 24
- (D) 6
42. In the lattice of divisors of 12, the value of $4 \wedge 6$ is:
- (A) 12
- (B) 2
- (C) 1
- (D) 24
43. In a Hasse diagram, an edge from x to y (where y is above x) implies:
- (A) y covers x
- (B) x covers y
- (C) $x=y$
- (D) x and y are incomparable

44. If every element of a distributive lattice has a complement, the lattice is called a:
- (A) Bounded Lattice
 - (B) Boolean Lattice
 - (C) Modular Lattice
 - (D) Sub lattice
45. The Principle of Duality in lattices allows us to swap
- (A) \vee with \wedge and \leq with \geq
 - (B) a with b
 - (C) 1 with x
 - (D) Elements with subsets
46. A lattice is "Distributed" (Distributive) if it satisfies:
- (A) The cancellation law
 - (B) The distributive law of meet over join
 - (C) Both (A) and (B)
 - (D) Neither (A) nor (B)
47. In the Hasse diagram of divisors of 12, the element 1 is:
- (A) The maximal element
 - (B) The minimal element
 - (C) Incomparable to 12
 - (D) A join of 4 and 6
48. A lattice is a POSET in which every pair of elements has:
- (A) A unique GLB and a unique LUB
 - (B) Only a GLB
 - (C) Only a LUB
 - (D) A total ordering
49. In a bounded lattice, the symbol 0 represents the:
- (A) Greatest element
 - (B) Least element
 - (C) Identity element for meet
 - (D) Universal set
50. Which property is NOT required for a relation to be a partial order?
- (A) Reflexivity
 - (B) Symmetry
 - (C) Antisymmetric
 - (D) Transitivity

51. In a Hasse diagram for the power set $P(\{a,b,c\})$ under the subset relation \subseteq , how many maximal elements are there?
- (A) 1
(B) 3
(C) 8
(D) 0
52. An element a in a lattice L is a complement of b if
- (A) $a \vee b=1$ and $a \wedge b=0$
(B) $a \vee b=0$ and $a \wedge b=1$
(C) $a \leq b$
(D) $a=b'$
53. The dual of the statement $a \vee (b \wedge a)=a$ in lattice theory is:
- (A) $a \wedge (b \vee a)=a$
(B) $a \vee (b \wedge a)=b$
(C) $a \wedge (b \vee a)=b$
(D) $a \vee b=a \wedge b$
54. A lattice is said to be 'complemented' if it is bounded and
- (A) Every element has at least one complement.
(B) Every element has exactly one complement.
(C) It is distributive.
(D) It is a finite chain.
55. A subset of a POSET where every two elements are comparable is called a:
- (A) Anti-chain
(B) Chain
(C) Lattice
(D) Sub-lattice
56. In a Hasse diagram, an element x is called a 'minimal element' if:
- (A) It is less than every other element in the set.
(B) No element y exists such that $y < x$.
(C) It is the GLB of the entire POSET.
(D) It is connected to the top element.
57. A lattice L is called a Distributive Lattice if for all $a,b,c \in L$.
- (A) $a \vee (b \wedge c)=(a \vee b) \wedge (a \vee c)$
(B) $a \vee b=b \vee a$
(C) $a \wedge (a \vee b)=a$
(D) $a \vee 1=1$
58. Consider the divisibility lattice of divisors of 30. What is the Least Upper Bound (LUB) of the set $\{6,10\}$?
- (A) 60
(B) 30
(C) 15
(D) 2
59. Consider the divisibility lattice of divisors of 30. What is the Greatest Lower Bound (GLB) of the set $\{6,10\}$?
- (A) 30
(B) 2
(C) 1
(D) 5
60. In the POSET $(\{1,2,3,\dots,12\}, |)$ where $|$ denotes divisibility, which elements are connected directly above 2 in a Hasse diagram?
- (A) 4 and 6
(B) 1
(C) 12
(D) 3

61. If $|A|=m$ and $|B|=n$, the total number of functions from A to B is:
- (A) m^n
 (B) n^m
 (C) 2^{mn}
 (D) $m*n$
62. The set of all ordered pairs (a,b) such that "a is the brother of b" is a relation that is:
- (A) Reflexive
 (B) Symmetric
 (C) Transitive
 (D) Equivalence
63. If $f(x)=x+3$ and $g(x)=x-3$, then fog is:
- (A) x^2-9
 (B) x
 (C) $2x$
 (D) 0
64. The number of reflexive relations on a set A with $|A|=3$ is:
- (A) 8
 (B) 64
 (C) 512
 (D) 9
65. A relation R that is reflexive, anti-symmetric, and transitive is a:
- (A) Equivalence Relation
 (B) Partial Order Relation
 (C) Total Relation
 (D) Symmetric Relation
66. How many binary relations are possible on a set A with n elements:
- (A) 2^n
 (B) n^2
 (C) 2^{n^2}
 (D) n^n
67. If $f: A \rightarrow B$ is bijection, then the domain of F^{-1} is:
- (A) A
 (B) B
 (C) $A \cap B$
 (D) \emptyset
68. The identity function I on set A is defined as:
- (A) $I(a)=0$
 (B) $I(a)=1$
 (C) $I(a)=a$
 (D) $I(a)=a^2$
69. A function $f: A \rightarrow B$ is called an 'into' function if:
- (A) Range of $f \subset B$
 (B) Range of $f = B$
 (C) f is bijective
 (D) f is one-to-one
70. If $R = \{(1,2), (2,3), (1,3)\}$ on the set $A = \{1,2,3\}$ the relation R is:
- (A) Reflexive
 (B) Symmetric
 (C) Transitive
 (D) Equivalence

71. The range of the function $f(x)=x^2$ (domain is the set of all real numbers R) is:
 (A) R
 (B) $(-\infty, \infty)$
 (C) $[0, \infty)$
 (D) $(0, \infty)$
72. A relation R on set A is antisymmetric if $(a,b) \in R$ and $(b,a) \in R$ implies:
 (A) $a+b=0$
 (B) $a=b$
 (C) $a=-b$
 (D) $R=a*b$
73. Given the function $f(x)=2x+1$ and $g(x)=x^2$, find the composite function $g \circ f(x)$:
 (A) $2x^2+1$
 (B) $(2x+1)^2$
 (C) $2x^2+2$
 (D) $4x^2+1$
74. Let $f(x) = \frac{x-1}{x+1}$ for $x \neq -1$, The inverse function is $f^{-1}(x)$ is :
 (A) $\frac{1+x}{1-x}$
 (B) $\frac{-1+x}{1-x}$
 (C) $\frac{1-x}{1+x}$
 (D) $\frac{2x}{1-x}$
75. If a function is both injective and surjective, it is called:
 (A) Into
 (B) Bijective
 (C) Constant
 (D) Identity
76. A function $f: A \rightarrow B$ is surjective (onto) if:
 (A) The range of f is equal to B .
 (B) Different elements in A map to different elements in B .
 (C) It has an inverse.
 (D) $A=B$.
77. A function $f: A \rightarrow B$ is called injective (one-to-one) if:
 (A) $f(a)=f(b) \Rightarrow a=b$
 (B) Every $b \in B$ has a pre-image in A .
 (C) The range equals the codomain.
 (D) It is both onto and into.
78. For a function $f: A \rightarrow B$, the set A is known as the:
 (A) Codomain
 (B) Range
 (C) Domain
 (D) Image
79. If a relation R is reflexive, symmetric, and transitive, it is classified as:
 (A) A Partial Order Relation
 (B) An Equivalence Relation
 (C) An Anti-symmetric Relation
 (D) An Inverse Relation
80. A relation R on a set A is reflexive if:
 (A) $\forall a \in A, (a,a) \in R$
 (B) $\forall a, b \in A, (a,b) \in R \Rightarrow (b,a) \in R$
 (C) $\forall a, b, c \in A, (a,b) \in R$ and $(b,c) \in R \Rightarrow (a,c) \in R$
 (D) $R=\emptyset$

81. In Venn diagrams, the intersection of two sets is visually represented by the:
- (A) Total area of both circles.
 - (B) Overlapping region of the two circles.
 - (C) Area outside the circles.
 - (D) Rectangle surrounding the circles.
82. Which of the following represents the Empty Set?
- (A) $\{0\}$
 - (B) \emptyset
 - (C) $\{\emptyset\}$
 - (D) $\{x; x=x\}$
83. If $|A|=3$ and $|B|=2$, and A and B are disjoint, how many elements are in the Power Set $P(A \cup B)$?
- (A) 5
 - (B) 25
 - (C) 32
 - (D) 16
84. If A and B are disjoint sets, then $|A \cup B|$ is:
- (A) $|A| + |B|$
 - (B) $|A| - |B|$
 - (C) 0
 - (D) $|A| * |B|$
85. A set containing exactly one element is called a:
- (A) Null Set
 - (B) Singleton Set
 - (C) Universal Set
 - (D) Proper Set
86. If $A = \{1, 2\}$ and $B = \{a, b\}$ then the element $(2, a)$ belongs to:
- (A) $A \cup B$
 - (B) $B * A$
 - (C) $A * B$
 - (D) $A \cap B$
87. The set of all subsets of a set S is called the:
- (A) Universal Set
 - (B) Solution Set
 - (C) Power Set
 - (D) Disjoint Set
88. The Symmetric Difference of two sets A and B, denoted $A \Delta B$, is defined as:
- (A) $(A \cup B) \cap (A \cap B)$
 - (B) $(A - B) \cup (B - A)$
 - (C) $A \cap B$
 - (D) $A \cup B$
89. If $|A| = 10$, $|B| = 15$, and $|A \cap B| = 5$, find $|A \cup B|$.
- (A) 25
 - (B) 20
 - (C) 30
 - (D) 15
90. Which of the following sets is a finite set?
- (A) $\{x \in \mathbb{Z}; x < 5\}$
 - (B) $\{x \in \mathbb{R}; 0 < x < 1\}$
 - (C) $\{x; x \text{ is a month of a year}\}$
 - (D) $\{x; x \text{ is a prime number}\}$

91. If A is a subset of B ($A \subseteq B$), which of the following must be true?
- (A) $A \cap B = A$
 (B) $A \cup B = A$
 (C) $A \cap B = B$
 (D) $A - B = B$
92. The Principle of Inclusion-Exclusion for two finite sets A and B states that $|A \cup B|$ equals:
- (A) $|A| + |B|$
 (B) $|A| + |B| + |A \cap B|$
 (C) $|A| + |B| - |A \cap B|$
 (D) $|A| * |B|$
93. Let $U = \{1, 2, 3, \dots, 10\}$ be the Universal Set and $A = \{x \in U; x \text{ is even}\}$. Find the $U \setminus A$:
- (A) $\{2, 4, 6, 8, 10\}$
 (B) $\{1, 3, 5, 7, 9\}$
 (C) $\{1, 2, 3, 4, 5\}$
 (D) \emptyset
94. For any two sets A and B , the set difference $A - B$ is equivalent to:
- (A) $A \cap B'$
 (B) $A' \cap B$
 (C) $A \cup B'$
 (D) $(A \cup B)'$
95. If $A = \{x, y\}$ and $B = \{1, 2, 3\}$, what is the cardinality of the Cartesian product $A * B$.
- (A) 5
 (B) 6
 (C) 8
 (D) 9
96. Which of the following is a characteristic of an infinite set?
- (A) Its elements can be counted and the process ends.
 (B) It is always a subset of a finite set.
 (C) It cannot be placed in a one-to-one correspondence with a proper subset of itself.
 (D) The number of elements in the set is not a natural number.
97. Given $A = \{1, 2, 3, 4, 5\}$ and $B = \{4, 5, 6, 7\}$, determine the intersection $A \cap B$.
- (A) $\{1, 2, 3, 4, 5, 6, 7\}$
 (B) $\{1, 2, 3\}$
 (C) $\{4, 5\}$
 (D) $\{16, 7\}$
98. Two sets A and B are defined as equal if and only if:
- (A) $|A| = |B|$
 (B) $A \subseteq B$ and $B \subseteq A$
 (C) $A \cap B = \phi$
 (D) $A \cap B = U$
99. A set that contains all possible elements under consideration for a specific mathematical discussion is known as the:
- (A) Subset
 (B) Power Set
 (C) Universal Set
 (D) Finite Set
100. If a set A has n elements, what is the cardinality of its Power Set $P(A)$?
- (A) n^2
 (B) 2^n
 (C) $2n$
 (D) $n!$

Rough Work
रफ़ कार्य

Example :

Question :

- Q. 1 A C D
- Q. 2 A B D
- Q. 3 A C D

5. Each question carries equal marks. Marks will be awarded according to the number of correct answers you have.
6. All answers are to be given on OMR Answer Sheet only. Answers given anywhere other than the place specified in the answer sheet will not be considered valid.
7. Before writing anything on the OMR Answer Sheet, all the instructions given in it should be read carefully.
8. After the completion of the examination candidates should leave the examination hall only after providing their OMR Answer Sheet to the invigilator. Candidate can carry their Question Booklet.
9. There will be no negative marking.
10. Rough work, if any, should be done on the blank pages provided for the purpose in the booklet.
11. To bring and use of log-book, calculator, pager & cellular phone in examination hall is prohibited.
12. In case of any difference found in English and Hindi version of the question, the English version of the question will be held authentic.

Impt. On opening the question booklet, first check that all the pages of the question booklet are printed properly. If there is any discrepancy in the question booklet, then after showing it to the invigilator, get another question booklet of the same series.

उदाहरण :

प्रश्न :

- प्रश्न 1 A C D
- प्रश्न 2 A B D
- प्रश्न 3 A C D

5. प्रत्येक प्रश्न के अंक समान हैं। आपके जितने उत्तर सही होंगे, उन्हीं के अनुसार अंक प्रदान किये जायेंगे।
6. सभी उत्तर केवल ओ.एम.आर. उत्तर-पत्रक (OMR Answer Sheet) पर ही दिये जाने हैं। उत्तर-पत्रक में निर्धारित स्थान के अलावा अन्यत्र कहीं पर दिया गया उत्तर मान्य नहीं होगा।
7. ओ.एम.आर. उत्तर-पत्रक (OMR Answer Sheet) पर कुछ भी लिखने से पूर्व उसमें दिये गये सभी अनुदेशों को सावधानीपूर्वक पढ़ लिया जाये।
8. परीक्षा समाप्ति के उपरान्त परीक्षार्थी कक्ष निरीक्षक को अपनी OMR Answer Sheet उपलब्ध कराने के बाद ही परीक्षा कक्ष से प्रस्थान करें। परीक्षार्थी अपने साथ प्रश्न-पुस्तिका ले जा सकते हैं।
9. निगेटिव मार्किंग नहीं है।
10. कोई भी रफ कार्य, प्रश्न-पुस्तिका में, रफ-कार्य के लिए दिए खाली पेज पर ही किया जाना चाहिए।
11. परीक्षा कक्ष में लॉग-बुक, कैल्कुलेटर, पेजर तथा सेल्युलर फोन ले जाना तथा उसका उपयोग करना वर्जित है।
12. प्रश्न के हिन्दी एवं अंग्रेजी रूपान्तरण में भिन्नता होने की दशा में प्रश्न का अंग्रेजी रूपान्तरण ही मान्य होगा।

महत्वपूर्ण : प्रश्न-पुस्तिका खोलने पर प्रथमतः जाँच कर देख लें कि प्रश्न-पुस्तिका के सभी पृष्ठ भलीभाँति छपे हुए हैं। यदि प्रश्न-पुस्तिका में कोई कमी हो, तो कक्षनिरीक्षक को दिखाकर उसी सीरीज की दूसरी प्रश्न-पुस्तिका प्राप्त कर लें।