

UNIVERSITY OF LUCKNOW

UNDERGRADUATE ENTRANCE TEST (UGET) - B.Sc. (MATHEMATICS) 2026

लखनऊ विश्वविद्यालय - स्नातक प्रवेश परीक्षा - बी.एस-सी. (गणित) 2026

MODEL PAPER - SET 2 / प्रतिदर्श प्रश्नपत्र - सेट 2

General Instructions: All questions are compulsory. Each question carries 2 marks. Only one option is correct.
सामान्य निर्देश: सभी प्रश्न अनिवार्य हैं। प्रत्येक प्रश्न 2 अंक का है। केवल एक विकल्प सही है।

SECTION A - MATHEMATICS / खण्ड A - गणित

1. If A is skew symmetric matrix, then A^2 is a ?

If A is skew symmetric matrix, then A^2 is a ?

- (1) Unitary matrix / Unitary matrix
- (2) Symmetric / Symmetric
- (3) Skew / Skew
- (4) Null matrix / Null matrix

Correct Answer / सही उत्तर : (2) Symmetric / Symmetric

Solution / हल : Correct option: Symmetric | सही विकल्प: Symmetric

2. Asymptotes are the tangents to the curve at which point?

Asymptotes are the tangents to the curve at which point?

- (1) Two points / Two points
- (2) Infinite / Infinite
- (3) One point / One point
- (4) Three points / Three points

Correct Answer / सही उत्तर : (2) Infinite / Infinite

Solution / हल : Correct option: Infinite | सही विकल्प: Infinite

3. Inner product spaces over the field of complex numbers are sometimes to as ?

Inner product spaces over the field of complex numbers are sometimes to as ?

- (1) real vector space / real vector space
- (2) vector space / vector space
- (3) unitary space / unitary space
- (4) abstract vector space / abstract vector space

Correct Answer / सही उत्तर : (3) unitary space / unitary space

Solution / हल : Correct option: unitary space | सही विकल्प: unitary space

4. Let (X, d) be a metric space and E is contained in X, E is called nowhere dense set if _____ ?

Let (X, d) be a metric space and E is contained in X, E is called nowhere dense set if _____ ?

- (1) closure of E is finite / closure of E is finite
- (2) closure of E is not defined / closure of E is not defined
- (3) closure of E terminate after some steps / closure of E terminate after some steps
- (4) closure of E is empty / closure of E is empty

Correct Answer / सही उत्तर : (4) closure of E is empty / closure of E is empty

Solution / हल : Correct option: closure of E is empty | सही विकल्प: closure of E is empty

5. For the following distribution: Class 0 -5 5 -10 10 -15 15 -20 20- 25 Frequency 10 15 12 20 9 The sum of lower limits of the median class and modal class is ?

For the following distribution: Class 0 -5 5 -10 10 -15 15 -20 20- 25 Frequency 10 15 12 20 9

The sum of lower limits of the median class and modal class is ?

- (1) 25 / $< 2, 5 >$
- (2) 15 / 15%
- (3) 30 / 30

(4) 35 / 3.5%

Correct Answer / सही उत्तर : (1) 25 / < 2, 5 >

Solution / हल : Correct option: 25 | सही विकल्प: < 2, 5 >

6. The points of discontinuity of the function $f(x) = \log|x|$ are ?

The points of discontinuity of the function $f(x) = \log|x|$ are ?

(1) 4 / 4 : 1

(2) 1 / 1 : 1

(3) 31 / 31%

(4) 2 / 2 : 1

Correct Answer / सही उत्तर : (2) 1 / 1 : 1

Solution / हल : Correct option: 1 | सही विकल्प: 1 : 1

7. How many cards must be picked from a standard pack of 52 cards to surely get 2 cards of the same suit?
How many cards must be picked from a standard pack of 52 cards to surely get 2 cards of the same suit?

(1) 5 / 5

(2) 3 / 3 : 1

(3) 4 / 4 : 1

(4) 2 / 2 : 1

Correct Answer / सही उत्तर : (1) 5 / 5

Solution / हल : Correct option: 5 | सही विकल्प: 5

8. Which of the following metric space is not complete?

Which of the following metric space is not complete?

(1) set of rationals / set of rationals

(2) set of irrationals / set of irrationals

(3) set of complex numbers / set of complex numbers

(4) set of real numbers / set of real numbers

Correct Answer / सही उत्तर : (1) set of rationals / set of rationals

Solution / हल : Correct option: set of rationals | सही विकल्प: set of rationals

9. Find the value of $f(x, y) = 8x + 5y$?

Find the value of $f(x, y) = 8x + 5y$?

(1) 14 / 14%

(2) 11 / 1, 1

(3) 12 / 12%

(4) 13 / 13

Correct Answer / सही उत्तर : (2) 11 / 1, 1

Solution / हल : Correct option: 11 | सही विकल्प: 1, 1

10. The reflection of the complex number $1+2i$ in the straight line $iz = z$ is $4+3i$ or not ?

The reflection of the complex number $1+2i$ in the straight line $iz = z$ is $4+3i$ or not ?

(1) 2 + i or not / 2 + i or not

(2) none of / none of

(3) 1 / 1 : 1

(4) 4 / 4 : 1

Correct Answer / सही उत्तर : (3) 1 / 1 : 1

Solution / हल : Correct option: 1 | सही विकल्प: 1 : 1

11. If the median of the distribution given below is 28.5, Class: 0 ?

If the median of the distribution given below is 28.5, Class: 0 ?

(1) 2, 5 / < 2, 5 >

(2) 8, 7 / 8, 7

(3) 8, 5 / 8, 5

(4) 3, 7 / 3, 7

Correct Answer / सही उत्तर : (2) 8, 7 / 8, 7

Solution / हल : Correct option: 8, 7 | सही विकल्प: 8, 7

12. The number of factors and their sum of 360 are ?

The number of factors and their sum of 360 are ?

(1) 24 & 1080 / 24 & 1080

(2) 12 & 810 / 12 & 810

(3) 12 & 540 / 12 & 540

(4) 24 & 1170 / 24 & 1170

Correct Answer / सही उत्तर : (4) 24 & 1170 / 24 & 1170

Solution / हल : Correct option: 24 & 1170 | सही विकल्प: 24 & 1170

13. The measure of the central tendency is given by the X-coordinate of the point of intersection of the more than ogive and less than ogive is ?

The measure of the central tendency is given by the X-coordinate of the point of intersection of the more than ogive and less than ogive is ?

(1) Mean / Mean

(2) Mode / Mode

(3) Median / Median

(4) All the above / All the above

Correct Answer / सही उत्तर : (3) Median / Median

Solution / हल : Correct option: Median | सही विकल्प: Median

14. The rank of a matrix in echelon form is equal to ?

The rank of a matrix in echelon form is equal to ?

(1) Number of variables / Number of variables

(2) Number of non zero rows of the matrix / Number of non zero rows of the matrix

(3) Order of matrix / Order of matrix

(4) Number of zero rows of the matrix / Number of zero rows of the matrix

Correct Answer / सही उत्तर : (2) Number of non zero rows of the matrix / Number of non zero rows of the matrix

Solution / हल : Correct option: Number of non zero rows of the matrix | सही विकल्प: Number of non zero rows of the matrix

15. The number of elements in the set $S = \{(a, b) | 2a^2 + 3b^2 = 35 : a, b \text{ are integers}\}$ is $2a^2 + 3b^2$?

The number of elements in the set $S = \{(a, b) | 2a^2 + 3b^2 = 35 : a, b \text{ are integers}\}$ is $2a^2 + 3b^2$?

(1) 4 / 4 : 1

(2) 12 / 12%

(3) 8 / 8

(4) 2 / 2 : 1

Correct Answer / सही उत्तर : (3) 8 / 8

Solution / हल : Correct option: 8 | सही विकल्प: 8

16. The spin field or rotation field or turning field goes around the origin instead of away from it. The field is S. if S is perpendicular to R then their dot product is ?

The spin field or rotation field or turning field goes around the origin instead of away from it. The field is S. if S is perpendicular to R then their dot product is ?

(1) infinite / infinite

(2) 1 (cid:1)(cid:2) (cid:1)(cid:2) / 1 (cid:1)(cid:2) (cid:1)(cid:2)

(3) not defined / अपरिभाषित

(4) 0 / 0

Correct Answer / सही उत्तर : (4) 0 / 0

Solution / हल : Correct option: 0 | सही विकल्प: 0

17. If n and m are natural numbers then the equation $Z^n = Z^m$?

If n and m are natural numbers then the equation $Z^n = Z^m$?

(1) Have one common solution / Have one common solution

(2) Have no common solution / Have no common solution

(3) Have more than two common solution / Have more than two common solution

(4) Have two common solution / Have two common solution

Correct Answer / सही उत्तर : (2) Have no common solution / Have no common solution

Solution / हल : Correct option: Have no common solution | सही विकल्प: Have no common solution

18. How many diagonals are there in polygon of 15 sides?

How many diagonals are there in polygon of 15 sides?

(1) 120 / 120

(2) 105 / 10.5%

(3) 135 / 135

(4) 90 / 90

Correct Answer / सही उत्तर : (4) 90 / 90

Solution / हल : Correct option: 90 | सही विकल्प: 90

19. The polynomial $f(x) = x^4 + x^2 + 1$ is irreducible over the field F of five ?

The polynomial $f(x) = x^4 + x^2 + 1$ is irreducible over the field F of five ?

(1) none of these / इनमें कोई नहीं

(2) irreducible over ring of integers / irreducible over ring of integers

(3) reducible over the field F of five / reducible over the field F of five

(4) reducible over the field of real numbers / reducible over the field of real numbers

Correct Answer / सही उत्तर : (3) reducible over the field F of five / reducible over the field F of five

Solution / हल : Correct option: reducible over the field F of five | सही विकल्प: reducible over the field F of five

20. What is the order of a 7-Sylow subgroup of $GL^3(\mathbb{Z}_7)$?

What is the order of a 7-Sylow subgroup of $GL^3(\mathbb{Z}_7)$?

(1) 343 7-Sylow / 343 7-Sylow

(2) 1 / 1 : 1

(3) 49 / 49%

(4) 7 / 7

Correct Answer / सही उत्तर : (1) 343 7-Sylow / 343 7-Sylow

Solution / हल : Correct option: 343 7-Sylow | सही विकल्प: 343 7-Sylow

21. If we are given two overlapping sets A and B in metric space then what can we say about $d(A, B)$?

If we are given two overlapping sets A and B in metric space then what can we say about $d(A, B)$?

(1) ∞ / ∞

(2) finite / finite

(3) zero / शून्य

(4) doesn't exist / doesn't exist

Correct Answer / सही उत्तर : (3) zero / शून्य

Solution / हल : Correct option: zero | सही विकल्प: शून्य

22. Which function defined on \mathbb{R} by $f(x) = x$ for every x in \mathbb{R} , is continuous in \mathbb{R} ?

Which function defined on \mathbb{R} by $f(x) = x$ for every x in \mathbb{R} , is continuous in \mathbb{R} ?

- (1) Riemann function / Riemann function
- (2) Identity function / Identity function
- (3) Dirichlet function / Dirichlet function
- (4) Constant function / Constant function

Correct Answer / सही उत्तर : (2) Identity function / Identity function

Solution / हल : Correct option: Identity function | सही विकल्प: Identity function

23. The intersection of finitely many open sets is ?

The intersection of finitely many open sets is ?

- (1) Open, closed / Open, closed
- (2) Closed, closed / Closed, closed
- (3) Open, open / Open, open
- (4) closed, open / closed, open

Correct Answer / सही उत्तर : (1) Open, closed / Open, closed

Solution / हल : Correct option: Open, closed | सही विकल्प: Open, closed

24. The triangle formed by the points 1, i , i^2 as vertices in the Argand diagram is ?

The triangle formed by the points 1, i , i^2 as vertices in the Argand diagram is ?

- (1) equilateral / equilateral
- (2) scalene / scalene
- (3) right-angled / right-angled
- (4) isosceles / isosceles

Correct Answer / सही उत्तर : (4) isosceles / isosceles

Solution / हल : Correct option: isosceles | सही विकल्प: isosceles

25. In a class of 60 students, 25 students play cricket and 20 students play tennis and 10 students play both the games, then the number of students who play neither is ?

In a class of 60 students, 25 students play cricket and 20 students play tennis and 10 students play both the games, then the number of students who play neither is ?

- (1) 35 / 3.5%
- (2) 45 / 45
- (3) 0 / 0
- (4) 25 / $\langle 2, 5 \rangle$

Correct Answer / सही उत्तर : (4) 25 / $\langle 2, 5 \rangle$

Solution / हल : Correct option: 25 | सही विकल्प: $\langle 2, 5 \rangle$

26. The distance of the point (2, 3, 4) from the plane $3x-6y+2z+11=0$ is $3x-6y+2z+11=0$ meceleue efyevog (2,3,4)

The distance of the point (2, 3, 4) from the plane $3x-6y+2z+11=0$ is $3x-6y+2z+11=0$ meceleue efyevog (2,3,4)

- (1) 9 / 9%
- (2) None of these / इनमें कोई नहीं
- (3) 7 / 7
- (4) 10 / 1, 0

Correct Answer / सही उत्तर : (2) None of these / इनमें कोई नहीं

Solution / हल : Correct option: None of these | सही विकल्प: इनमें कोई नहीं

27. The median for a moderately asymmetrical series having mode and mean as 125 km and 130.7 km respectively is ?

The median for a moderately asymmetrical series having mode and mean as 125 km and 130.7 km respectively is ?

- (1) 128.8 m / 128.8 m
- (2) 129.7 m / 129.7 m

(3) 128.8 km / 128.8 km

(4) 124.8 m / 124.8 m

Correct Answer / सही उत्तर : (3) 128.8 km / 128.8 km

Solution / हल : Correct option: 128.8 km | सही विकल्प: 128.8 km

28. The line integrals can be converted to surface integral using in multiple connected domain?
The line integrals can be converted to surface integral using in multiple connected domain?

(1) Baire's Sandwich theorem / Baire's Sandwich theorem

(2) Sandwich theorem / Sandwich theorem

(3) Riemann equation / Riemann equation

(4) Green's theorem / Green's theorem

Correct Answer / सही उत्तर : (4) Green's theorem / Green's theorem

Solution / हल : Correct option: Green's theorem | सही विकल्प: Green's theorem

29. Let $x = 4t$ be the coordinates of particle moving over an ellipse at a point where the growth rate of the ground is twice, then the rate of the Y-axis is ueerefpe ?

Let $y = 4t$ be the coordinates of particle moving over an ellipse at a point where the growth rate of the ground is twice, then the rate of the Y-axis is ueerefpe ?

(1) (2, 2) / 22

(2) (2, 4) / 24

(3) (4, 2) / (4, 2)

(4) (4, 4) / (4, 4)

Correct Answer / सही उत्तर : (4) (4, 4) / (4, 4)

Solution / हल : Correct option: (4, 4) | सही विकल्प: (4, 4)

30. If $a = 3, b = 4$, then the value of 3^a ?

If $a = 3, b = 4$, then the value of 3^a ?

(1) 36 / 36

(2) 35 / 3.5%

(3) 34 / 3 : 4

(4) 37 / 37

Correct Answer / सही उत्तर : (3) 34 / 3 : 4

Solution / हल : Correct option: 34 | सही विकल्प: 3 : 4

31. The possible solutions (s) of the equation $\tan^{-1} x + \cos x = 2$, lying in the interval $0 < x < \pi$?

The possible solutions (s) of the equation $\tan^{-1} x + \cos x = 2$, lying in the interval $0 < x < \pi$?

(1) 2 / 2 : 1

(2) 1 / 1 : 1

(3) 3 / 3 : 1

(4) 4 / 4 : 1

Correct Answer / सही उत्तर : (1) 2 / 2 : 1

Solution / हल : Correct option: 2 | सही विकल्प: 2 : 1

32. The sum of the finite series $5 + 8 + 11 + \dots + 47 + 50$ is ?

The sum of the finite series $5 + 8 + 11 + \dots + 47 + 50$ is ?

(1) 244 / 244

(2) 442 / 442

(3) 440 / 440

(4) 435 / 435

Correct Answer / सही उत्तर : (3) 440 / 440

Solution / हल : Correct option: 440 | सही विकल्प: 440

33. If $U(8) = \{1, 3, 5, 7\}$ and $U(10) = \{1, 3, 7, 9\}$, then find how many element are there in $U(8)$?
If $U(8) = \{1, 3, 5, 7\}$ and $U(10) = \{1, 3, 7, 9\}$, then find how many element are there in $U(8)$?

- (1) 32 / 32
- (2) 8 / 8
- (3) 16 / 16
- (4) 4 / 4 : 1

Correct Answer / सही उत्तर : (3) 16 / 16

Solution / हल : Correct option: 16 | सही विकल्प: 16

34. The sequence given by interval $[0, 1]$ is _____ ?
The sequence given by interval $[0, 1]$ is _____ ?

- (1) unbounded / unbounded
- (2) convergent / convergent
- (3) divergent / divergent
- (4) Bounded / Bounded

Correct Answer / सही उत्तर : (4) Bounded / Bounded

Solution / हल : Correct option: Bounded | सही विकल्प: Bounded

35. Which one is not in the automorphism group?
Which one is not in the automorphism group?

- (1) decomposition / decomposition
- (2) identity / तत्समकता (Identity)
- (3) closure / closure
- (4) associativity / associativity

Correct Answer / सही उत्तर : (1) decomposition / decomposition

Solution / हल : Correct option: decomposition | सही विकल्प: decomposition

36. How many subgroups of the permutation group S^4 have of order 3?
How many subgroups of the permutation group S^4 have of order 3?

- (1) 0 / 0
- (2) 8 / 8
- (3) can not say / can not say
- (4) 4 / 4 : 1

Correct Answer / सही उत्तर : (4) 4 / 4 : 1

Solution / हल : Correct option: 4 | सही विकल्प: 4 : 1

37. If $f(z) = u+iv$ is an analytic function in domain D then?
If $f(z) = u+iv$ is an analytic function in domain D then?

- (1) u and v are parallel / u and v are parallel
- (2) u and v bipolarate each other / u and v bipolarate each other
- (3) u and v intersect each othe / u and v intersect each othe
- (4) u and v form orthogonal family / u and v form orthogonal family

Correct Answer / सही उत्तर : (4) u and v form orthogonal family / u and v form orthogonal family

Solution / हल : Correct option: u and v form orthogonal family | सही विकल्प: u and v form orthogonal family

38. Let us say a, b, c are in AP then, which of the following in not true?
Let us say a, b, c are in AP then, which of the following in not true?

- (1) $2b = a + c$ / $2b = a + c$
- (2) $b + b = a + c$ / $b + b = a + c$
- (3) b / b
- (4) $b + a = c + b$ / $b + a = c + b$

Correct Answer / सही उत्तर : (4) $b + a = c + b$ / $b + a = c + b$

Solution / हल : Correct option: $b + a = c + b$ | सही विकल्प: $b + a = c + b$

39. Among any group of 11 integers, the number of integers with the same remainder when they are divided by 10 is ?

Among any group of 11 integers, the number of integers with the same remainder when they are divided by 10 is ?

- (1) atmost 5 / atmost 5
- (2) atleast 5 / atleast 5
- (3) atleast 2 / atleast 2
- (4) exactly 3 / exactly 3

Correct Answer / सही उत्तर : (3) atleast 2 / atleast 2

Solution / हल : Correct option: atleast 2 | सही विकल्प: atleast 2

40. Which theorem states that" An integral function attains every finite value with at-most one possible exception?

Which theorem states that" An integral function attains every finite value with at-most one possible exception?

- (1) Jensen's formula / Jensen's formula
- (2) Picard's theorem / Picard's theorem
- (3) Jensen's inequality / Jensen's inequality
- (4) Schwartz' lemma / Schwartz' lemma

Correct Answer / सही उत्तर : (2) Picard's theorem / Picard's theorem

Solution / हल : Correct option: Picard's theorem | सही विकल्प: Picard's theorem

SECTION B - PHYSICS / खण्ड B - भौतिक विज्ञान

41. Time period of a simple pendulum depends on its ?

Time period of a simple pendulum depends on its ?

- (1) both (a) and (b) / both (a) and (b)
- (2) none of these / इनमें कोई नहीं
- (3) m / m
- (4) l / l

Correct Answer / सही उत्तर : (4) l / l

Solution / हल : Correct option: l | सही विकल्प: l

42. Three capillaries of lengths l , $2l$ and $4l$ with their radii r , $2r$ and $4r$ respectively are connected in series and a fluid is flowing through the capillaries placed horizontally. Pressure across the capillaries will be in the ratio ?

Three capillaries of lengths l , $2l$ and $4l$ with their radii r , $2r$ and $4r$ respectively are connected in series and a fluid is flowing through the capillaries placed horizontally. Pressure across the capillaries will be in the ratio ?

- (1) 1:8:24 / 1:8:24
- (2) 4:2:1 / 4:2:1
- (3) 64:8:1 / 64:8:1
- (4) 1:2:4 / 1:2:4

Correct Answer / सही उत्तर : (3) 64:8:1 / 64:8:1

Solution / हल : Correct option: 64:8:1 | सही विकल्प: 64:8:1

43. The temperature of Sun is 6000 K and the 2.88×10^3 Wien's constant is mK. Assuming Sun to be a perfectly black body, the wavelength corresponding to the maximum intensity in the solar radiation must be ?

The temperature of Sun is 6000 K and the 2.88×10^3 Wien's constant is mK. Assuming Sun to be a perfectly black body, the wavelength corresponding to the maximum intensity in the solar radiation must be ?

- (1) 290 nm / 290 nm
- (2) 480 nm / 480 nm
- (3) 172.8 nm / 172.8 nm
- (4) None of the above / इनमें कोई नहीं

Correct Answer / सही उत्तर : (2) 480 nm / 480 nm

Solution / हल : Correct option: 480 nm | सही विकल्प: 480 nm

44. What will be the degree of freedom for a rigid body having N particles?

What will be the degree of freedom for a rigid body having N particles?

- (1) N / N
- (2) 3 / 3 : 1
- (3) 3N / 3N
- (4) Infinite / Infinite

Correct Answer / सही उत्तर : (3) 3N / 3N

Solution / हल : Correct option: 3N | सही विकल्प: 3N

45. The population inversion in He-Ne laser is produced by ?

The population inversion in He-Ne laser is produced by ?

- (1) Photon excitation / Photon excitation
- (2) chemical reaction / chemical reaction
- (3) electron excitation / electron excitation
- (4) inelastic atomic collisions / inelastic atomic collisions

Correct Answer / सही उत्तर : (3) electron excitation / electron excitation

Solution / हल : Correct option: electron excitation | सही विकल्प: electron excitation

46. The concept of internal energy was first introduced by ?

The concept of internal energy was first introduced by ?

- (1) Stefan's law / Stefan's law
- (2) Second law of thermodynamics / Second law of thermodynamics
- (3) Wien's law PV / Wien's law PV
- (4) First law of thermodynamics / First law of thermodynamics

Correct Answer / सही उत्तर : (4) First law of thermodynamics / First law of thermodynamics

Solution / हल : Correct option: First law of thermodynamics | सही विकल्प: First law of thermodynamics

47. A plane polarized light is passed through a quarter wave plate. The circularly polarized light is obtained, when the angle between plane polarized light and principal axis of the plate is ?

A plane polarized light is passed through a quarter wave plate. The circularly polarized light is obtained, when the angle between plane polarized light and principal axis of the plate is ?

- (1) 90° / 90°
- (2) 180° / 180°
- (3) 0° / 0, 0
- (4) 45° / 45°

Correct Answer / सही उत्तर : (4) 45° / 45°

Solution / हल : Correct option: 45° | सही विकल्प: 45°

48. The fictitious force on a body of mass 5 kg in a frame of moving vertically upwards m/s^2 with an acceleration of 5 is ?

The fictitious force on a body of mass 5 kg in a frame of moving vertically upwards m/s^2 with an acceleration of 5 is ?

- (1) 25 N, vertically upwards / 25 N, vertically upwards

- (2) 25 N, vertically / 25 N, vertically
- (3) 74 N, vertically upwards / 74 N, vertically upwards
- (4) 74 N, vertically / 74 N, vertically

Correct Answer / सही उत्तर : (2) 25 N, vertically / 25 N, vertically

Solution / हल : Correct option: 25 N, vertically | सही विकल्प: 25 N, vertically

49. Which one of the following experiments supports the wave nature of matter ?
Which one of the following experiments supports the wave nature of matter ?

- (1) SternGerlach experiment / SternGerlach experiment
- (2) DavissonGermer experiment / DavissonGermer experiment
- (3) FranckHertz experiment / FranckHertz experiment
- (4) MichelsonMorley experiment / MichelsonMorley experiment

Correct Answer / सही उत्तर : (4) MichelsonMorley experiment / MichelsonMorley experiment

Solution / हल : Correct option: MichelsonMorley experiment | सही विकल्प: MichelsonMorley experiment

50. Formula Volt \times Charge/Time ($V \times Q/T$) can be equivalent to ?
Formula Volt \times Charge/Time ($V \times Q/T$) can be equivalent to ?

- (1) Velocity / Velocity
- (2) Power / Power
- (3) Work done / Work done
- (4) Acceleration / Acceleration

Correct Answer / सही उत्तर : (2) Power / Power

Solution / हल : Correct option: Power | सही विकल्प: Power

51. A circular coil of radius r carries a current and the magnetic field at its centre is B . At what distance from the centre on the axis of coil, the magnetic field will be $B/8$?

A circular coil of radius r carries a current and the magnetic field at its centre is B . At what distance from the centre on the axis of coil, the magnetic field will be $B/8$?

- (1) r / r
- (2) $2r / 2r$
- (3) $3r / 3r$
- (4) $8r / 8r$

Correct Answer / सही उत्तर : (3) $3r / 3r$

Solution / हल : Correct option: $3r$ | सही विकल्प: $3r$

52. Which of the following is not correct? ∂D ?

Which of the following is not correct? ∂D ?

- (1) $\nabla \cdot B = 0 / \nabla \cdot B = 0$
- (2) $\nabla \times B = \mu_0 j / \nabla \times B = \mu_0 j$
- (3) $\nabla \times B = \mu_0 j + \partial D / \nabla \times B = \mu_0 j + \partial D$
- (4) $\nabla \cdot B = 0 / \nabla \cdot B = 0$

Correct Answer / सही उत्तर : (1) $\nabla \cdot B = 0 / \nabla \cdot B = 0$

Solution / हल : Correct option: $\nabla \cdot B = 0$ | सही विकल्प: $\nabla \cdot B = 0$

53. The same retarding force is applied to stop a train. If the speed is doubled, then the distance will be ?

The same retarding force is applied to stop a train. If the speed is doubled, then the distance will be ?

- (1) doubled / doubled
- (2) The same / The same
- (3) four times / four times
- (4) half / half

Correct Answer / सही उत्तर : (3) four times / four times

Solution / हल : Correct option: four times | सही विकल्प: four times

54. If the density of aluminium is 2600 and its Young modulus is $7.8 \times 10^{10} \text{ N/m}^2$, the speed of sound in aluminium will be ?

If the density of aluminium is 2600 and its Young modulus is $7.8 \times 10^{10} \text{ N/m}^2$, the speed of sound in aluminium will be ?

- (1) 3000 m/s / 3000 m/s
- (2) 340 m/s / 340 m/s
- (3) 5477 m/s / 5477 m/s
- (4) 6431 m/s / 6431 m/s

Correct Answer / सही उत्तर : (3) 5477 m/s / 5477 m/s

Solution / हल : Correct option: 5477 m/s | सही विकल्प: 5477 m/s

55. A system in contact with a heat reservoir can most suitably be represented by ?

A system in contact with a heat reservoir can most suitably be represented by ?

- (1) Micro canonical ensemble / Micro canonical ensemble
- (2) Coulomb ensemble / Coulomb ensemble
- (3) Grand canonical ensemble / Grand canonical ensemble
- (4) Canonical ensemble / Canonical ensemble

Correct Answer / सही उत्तर : (4) Canonical ensemble / Canonical ensemble

Solution / हल : Correct option: Canonical ensemble | सही विकल्प: Canonical ensemble

56. A zone plate is to be constructed with focal length of 50cm for $\lambda = 5.0 \times 10^{-5} \text{ cm}$. Its first radius will be ?

A zone plate is to be constructed with focal length of 50cm for $\lambda = 5.0 \times 10^{-5} \text{ cm}$. Its first radius will be ?

- (1) 0.50 mm / 0.50 mm
- (2) 0.60 mm / 0.60 mm
- (3) 0.40 mm / 0.40 mm
- (4) 0.75 mm / 0.75 mm

Correct Answer / सही उत्तर : (1) 0.50 mm / 0.50 mm

Solution / हल : Correct option: 0.50 mm | सही विकल्प: 0.50 mm

57. The velocity of flow of water in a horizontal pipe is 5.0 m/sec. The velocity head of water is ($g = 10 \text{ m/sec}^2$) ?

The velocity of flow of water in a horizontal pipe is 5.0 m/sec. The velocity head of water is ($g = 10 \text{ m/sec}^2$) ?

- (1) 1.25 m/sec² / 1.25 m/sec²
- (2) 1.25 m / 1.25 m
- (3) 2 m/sec² / 2 m/sec²
- (4) 2 m / 2 m

Correct Answer / सही उत्तर : (2) 1.25 m / 1.25 m

Solution / हल : Correct option: 1.25 m | सही विकल्प: 1.25 m

58. The population inversion between energy states in a Ruby laser is achieved through ?

The population inversion between energy states in a Ruby laser is achieved through ?

- (1) raising of temperature / raising of temperature
- (2) lowering of temperature / lowering of temperature
- (3) optical pumping / optical pumping
- (4) vacuum pumping / vacuum pumping

Correct Answer / सही उत्तर : (3) optical pumping / optical pumping

Solution / हल : Correct option: optical pumping | सही विकल्प: optical pumping

59. Gibbs paradox in Statistical Mechanics is related to the additive property of ?

Gibbs paradox in Statistical Mechanics is related to the additive property of ?

- (1) Energy / Energy

- (2) Temperature / ताप
- (3) Momentum / Momentum
- (4) Entropy / Entropy

Correct Answer / सही उत्तर : (4) Entropy / Entropy

Solution / हल : Correct option: Entropy | सही विकल्प: Entropy

60. When the length of an astronomical telescope tube increases, its magnifying power ?
When the length of an astronomical telescope tube increases, its magnifying power ?

- (1) Increases / बढ़ता है
- (2) Does not change / Does not change
- (3) May decrease or increase / May decrease or increase
- (4) Decreases / घटती (Decreases)

Correct Answer / सही उत्तर : (4) Decreases / घटती (Decreases)

Solution / हल : Correct option: Decreases | सही विकल्प: घटती (Decreases)

SECTION C - CHEMISTRY / खण्ड C - रसायन विज्ञान

61. Which one of the following is used as a negative catalyst for the decomposition of hydrogen peroxide?
हाइड्रोजन परॉक्साइड के अपघटन हेतु ऋणात्मक उत्प्रेरक के रूप में क्या प्रयुक्त होता है ?

- (1) platinum / प्लैटिनम
- (2) sodium carbonate / सोडियम कार्बोनेट
- (3) oxalic acid / ऑक्सैलिक अम्ल
- (4) acetanilide / एसीटानिलाइड

Correct Answer / सही उत्तर : (4) acetanilide / एसीटानिलाइड

Solution / हल : Acetanilide acts as a negative catalyst for H₂O₂ decomposition. | एसीटानिलाइड H₂O₂ अपघटन हेतु ऋणात्मक उत्प्रेरक है।

62. The unit cell present in ABCABC..... closest packing of atoms, is of the type ABCABC ?
ABCABC... निविड संकुलन में इकाई कोष्ठिका किस प्रकार की होती है ?

- (1) face-centered cube / फलक-केंद्रित घन
- (2) hexagonal / षट्कोणीय
- (3) tetragonal / चतुष्कोणीय
- (4) primitive cube / आद्य घन

Correct Answer / सही उत्तर : (1) face-centered cube / फलक-केंद्रित घन

Solution / हल : ABCABC closest packing has a face-centered cubic unit cell. | ABCABC निविड संकुलन में फलक-केंद्रित घन इकाई कोष्ठिका होती है।

63. A first order reaction is 15% complete in 20 minutes. How long will it take to be 60% complete?
एक प्रथम कोटि अभिक्रिया 20 मिनट में 15% पूर्ण होती है। 60% पूर्ण होने में कितना समय लगेगा ?

- (1) 112.7 sec / 112.7 sec
- (2) 78.3 sec / 78.3 sec
- (3) 154.6 sec / 154.6 sec
- (4) 61.2 sec / 61.2 sec

Correct Answer / सही उत्तर : (1) 112.7 sec / 112.7 sec

Solution / हल : For the first-order reaction, 60% completion takes about 112.7 sec. | प्रथम कोटि अभिक्रिया 60% पूर्ण होने में लगभग 112.7 sec लेती है।

64. Which of the following compounds reacts with conjugated diene to form cyclohexene?
निम्नलिखित में कौन संयुग्मित डायन से अभिक्रिया कर साइक्लोहेक्सीन बनाता है ?

- (1) Dienophile / डाइनोफाइल
- (2) Bromo benzene / ब्रोमोबेन्जीन
- (3) Hexane / हेक्सेन

(4) 1,3,5-hexatriene / 1,3,5-हेक्साट्राईन

Correct Answer / सही उत्तर : (1) Dienophile / डाइनोफाइल

Solution / हल : A dienophile reacts with a conjugated diene to form cyclohexene. | डाइनोफाइल संयुग्मित डाईन से साइक्लोहेक्सीन बनाता है।

65. Which of the following methods can't be used for the preparation of hydrogen gas?

Which of the following methods can't be used for the preparation of hydrogen gas?

(1) Steam reformer process / Steam reformer process

(2) Reaction of ethanolamine solution with CO / Reaction of ethanolamine solution with CO

(3) Electrolysis of the aqueous solution of NaOH or KOH / Electrolysis of the aqueous solution of NaOH or KOH

(4) Reaction of saltlike hydrides with water / Reaction of saltlike hydrides with water

Correct Answer / सही उत्तर : (2) Reaction of ethanolamine solution with CO / Reaction of ethanolamine solution with CO

Solution / हल : Correct option: Reaction of ethanolamine solution with CO | सही विकल्प: Reaction of ethanolamine solution with CO

66. Which of the following is not an antibiotic?

निम्नलिखित में कौन प्रतिजैविक (antibiotic) नहीं है ?

(1) Tetracyclins / टेट्रासाइक्लिन

(2) Ranitidine / रैनिटिडीन

(3) Cefixime / सेफिक्साइम

(4) Ofloxins / ऑफ्लॉक्ससिन

Correct Answer / सही उत्तर : (2) Ranitidine / रैनिटिडीन

Solution / हल : Ranitidine is an antiulcer drug, not an antibiotic. | रैनिटिडीन प्रतिअल्सर औषधि है, प्रतिजैविक नहीं।

67. For a molecule, molecular ion peak appears ?

किसी अणु का आविष्क आयन शिखर किसके लिए दिखता है ?

(1) CH -CH -CO -CH₃ 2 2 / CH -CH -CO -CH₃ 2 2

(2) CH -CH -CO-CH -CH₃ 2 2 / CH -CH -CO-CH -CH₃ 2 2

(3) CH -CH -CO-O-CH -CH₃ 2 2 / CH -CH -CO-O-CH -CH₃ 2 2

(4) CH -CHO-CH -CH₃ 2 / CH -CHO-CH -CH₃ 2

Correct Answer / सही उत्तर : (3) CH -CH -CO-O-CH -CH₃ 2 2 / CH -CH -CO-O-CH -CH₃ 2 2

Solution / हल : The molecular ion corresponds to CH₃CH₂-CO-O-CH₂CH₃. | आविष्क आयन CH₃CH₂-CO-O-CH₂CH₃ के अनुरूप है।

68. Thiocyanogen (SCN) is stable only at: 2 e fLe ?

थायोसायनोजन (SCN)₂ केवल किस ताप पर स्थिर है ?

(1) Room temperature / कमरे का ताप

(2) Very high temperature / अति उच्च ताप

(3) High temperature / उच्च ताप

(4) Low temperature / निम्न ताप

Correct Answer / सही उत्तर : (4) Low temperature / निम्न ताप

Solution / हल : Thiocyanogen (SCN)₂ is stable only at low temperature. | थायोसायनोजन (SCN)₂ केवल निम्न ताप पर स्थिर है।

69. Galvanized iron is obtained by coating iron with a thin film of uesns hej Gmeke ?

Galvanized iron is obtained by coating iron with a thin film of uesns hej Gmeke ?

(1) Cu / Cu

(2) Al / AlCl₃

(3) Zn / Zn

(4) Sn / Sn

Correct Answer / सही उत्तर : (3) Zn / Zn

Solution / हल : Correct option: Zn | सही विकल्प: Zn

70. Observed standard enthalpy of a surface phenomenon for CH as adsorbate is -21.4 kJ mol⁻¹?
CH₄ (अधिशोष्य) के पृष्ठ परिघटना की मानक एन्थैल्पी -21 है — यह क्या है ?

- (1) Physical adsorption / भौतिक अधिशोषण
- (2) Chemical adsorption / रासायनिक अधिशोषण
- (3) Physisorption / भौतिक अधिशोषण
- (4) Chemisorption / रासायनिक अधिशोषण

Correct Answer / सही उत्तर : (3) Physisorption / भौतिक अधिशोषण

Solution / हल : Standard enthalpy -21 kJ for CH₄ indicates physisorption. | CH₄ हेतु -21 kJ मानक एन्थैल्पी भौतिक अधिशोषण दर्शाती है।

71. In Buckminsterfullerene (C-60), all carbon atoms?
बकमिंस्टर-फुलरीन (C-60) में सभी कार्बन परमाणु कैसे होते हैं ?

- (1) sp³-hybridized with a square antiprism shape / वर्ग प्रतिप्रिज्म के साथ sp³-संकरित
- (2) sp²-hybridized with a truncated icosahedron shape / सत्यखंडित विंशतिफलक आकार के साथ sp²-संकरित
- (3) sp²-hybridized with a diamond-like shape / हीरे जैसी आकृति के साथ sp²-संकरित
- (4) sp²-hybridized with a graphite-like shape / ग्रेफाइट जैसी आकृति के साथ sp²-संकरित

Correct Answer / सही उत्तर : (2) sp²-hybridized with a truncated icosahedron shape / सत्यखंडित विंशतिफलक आकार के साथ sp²-संकरित

Solution / हल : In C-60 all carbons are sp² with a truncated icosahedron shape. | C-60 में सभी कार्बन sp², सत्यखंडित विंशतिफलक आकार में हैं।

72. The V-shaped graph represents conductometric titration of : Jeer-Deeke ?
V-आकार ग्राफ किस चालकतामापी अनुमापन को दर्शाता है ?

- (1) Weak acid vs weak base / दुर्बल अम्ल बनाम दुर्बल क्षार
- (2) Strong acid vs weak base / प्रबल अम्ल बनाम दुर्बल क्षार
- (3) Strong acid vs strong base / प्रबल अम्ल बनाम प्रबल क्षार
- (4) Strong acid & weak acid vs weak base / प्रबल व दुर्बल अम्ल बनाम दुर्बल क्षार

Correct Answer / सही उत्तर : (3) Strong acid vs strong base / प्रबल अम्ल बनाम प्रबल क्षार

Solution / हल : A V-shaped conductometric curve is strong acid vs strong base. | V-आकार चालकतामापी वक्र प्रबल अम्ल बनाम प्रबल क्षार है।

73. In the prolonged electrolysis of water to prepare heavy water, the anode and cathode, respectively, are :
भारी जल बनाने हेतु जल के दीर्घ विद्युत-अपघटन में एनोड व कैथोड क्रमशः क्या हैं ?

- (1) Graphite and steel / ग्रेफाइट व स्टील
- (2) Steel and nickel / स्टील व निकल
- (3) Nickel and steel / निकल व स्टील
- (4) Nickel and graphite / निकल व ग्रेफाइट

Correct Answer / सही उत्तर : (3) Nickel and steel / निकल व स्टील

Solution / हल : For heavy water electrolysis, anode is nickel and cathode steel. | भारी जल के विद्युत-अपघटन में एनोड निकल व कैथोड स्टील है।

74. Which of the following is not a polymorph of calcium carbonate?
निम्नलिखित में कौन कैल्शियम कार्बोनेट का बहुरूप (polymorph) नहीं है ?

- (1) Vaterite / वैटेराइट
- (2) Aragonite / अरागोनाइट

(3) Calcite / कैल्साइट

(4) Perovskite / पेरोव्स्काइट

Correct Answer / सही उत्तर : (4) Perovskite / पेरोव्स्काइट

Solution / हल : Perovskite is NOT a polymorph of calcium carbonate. | पेरोव्स्काइट कैल्शियम कार्बोनेट का बहुरूप नहीं है।

75. Allene must have which type of hybridization?

एलीन (Allene) में किस प्रकार का संकरण होता है ?

(1) Sp² / sp²

(2) Sp³d / sp³d

(3) Sp / sp

(4) Sp³ / sp³

Correct Answer / सही उत्तर : (3) Sp / sp

Solution / हल : Allene (C=C=C) has sp hybridisation at the central carbon. | एलीन (C=C=C) के मध्य कार्बन पर sp संकरण होता है।

76. Hydrogen is predicted to exist naturally in metallic state ?

हाइड्रोजन के प्राकृतिक रूप से धात्विक अवस्था में होने का अनुमान किस दशा में है ?

(1) Room temperature / कमरे का ताप

(2) Extremely low pressure / अत्यधिक निम्न दाब

(3) Extremely high pressure / अत्यधिक उच्च दाब

(4) Extremely high temperature / अत्यधिक उच्च ताप

Correct Answer / सही उत्तर : (3) Extremely high pressure / अत्यधिक उच्च दाब

Solution / हल : Hydrogen is predicted to be metallic at extremely high pressure. | हाइड्रोजन अत्यधिक उच्च दाब पर धात्विक होने का अनुमान है।

77. The ratio of the masses of oxygen that are combined with one gram of nitrogen in the compounds N₂O₃ and NO is 3 : 2. This statement is correct as per which law?

N₂O₃ व NO में एक ग्राम नाइट्रोजन से संयुक्त ऑक्सीजन के द्रव्यमान का अनुपात 3:2 है — यह किस नियम के अनुसार है ?

(1) Gay Lussac's law of gaseous volumes / गे-लुसाक नियम

(2) Law of definite proportions / निश्चित अनुपात नियम

(3) Law of conservation of mass / द्रव्यमान संरक्षण नियम

(4) Law of multiple proportions / गुणित अनुपात नियम

Correct Answer / सही उत्तर : (4) Law of multiple proportions / गुणित अनुपात नियम

Solution / हल : The 3:2 oxygen ratio follows the law of multiple proportions. | 3:2 ऑक्सीजन अनुपात गुणित अनुपात नियम के अनुसार है।

78. In elimination reaction of sec-Butyl trimethylammonium hydroxide, major product formed would be _____ ?

sec-ब्यूटिल ट्राइमिथाइलअमोनियम हाइड्रॉक्साइड की विलोपन अभिक्रिया में मुख्य उत्पाद क्या होगा ?

(1) 1-Butene / 1-ब्यूटीन

(2) No reaction occurs / कोई अभिक्रिया नहीं

(3) 2-Butene / 2-ब्यूटीन

(4) Both 1-Butene and 2-Butene in equal amount / 1- व 2-ब्यूटीन समान मात्रा में

Correct Answer / सही उत्तर : (1) 1-Butene / 1-ब्यूटीन

Solution / हल : Elimination of sec-butyl trimethylammonium hydroxide gives 1-butene (Hofmann). | sec-ब्यूटिल ट्राइमिथाइलअमोनियम हाइड्रॉक्साइड की विलोपन से 1-ब्यूटीन (Hofmann) बनता है।

79. In which of the following molecules, intermolecular hydrogen bonding is possible?

निम्नलिखित में किस अणु में अंतराण्विक हाइड्रोजन बंधन संभव है ?

- (1) N-Methylaniline / N-मिथाइलएनिलीन
- (2) N,N-Dimethylaniline / N,N-डाइमिथाइलएनिलीन
- (3) Nitrobenzene / नाइट्रोबेन्जीन
- (4) Trimethylamine / ट्राइमिथाइलएमीन

Correct Answer / सही उत्तर : (1) N-Methylaniline / N-मिथाइलएनिलीन

Solution / हल : N-Methylaniline can form intermolecular hydrogen bonds. | N-मिथाइलएनिलीन अंतराण्विक हाइड्रोजन बंध बना सकता है।

**80. Eka-aluminium and Eka-silicon, respectively, are to : Fke ?
Eka-aluminium and Eka-silicon, respectively, are to : Fke ?**

- (1) Silicon and Aluminium / सिलिकॉन व ऐलुमिनियम
- (2) Germanium and Gallium / जर्मोनियम व गैलियम
- (3) Aluminium and Silicon / ऐलुमिनियम व सिलिकॉन
- (4) Gallium and Germanium / गैलियम व जर्मोनियम

Correct Answer / सही उत्तर : (4) Gallium and Germanium / गैलियम व जर्मोनियम

Solution / हल : Correct option: Gallium and Germanium | सही विकल्प: गैलियम व जर्मोनियम

81. The coagulating power of an effective ion carrying the charge opposite to the sol particles has been illustrated ?

सॉल कणों के विपरीत आवेश वाले प्रभावी आयन की स्कंदन शक्ति किस नियम से समझाई जाती है ?

- (1) Hardy-schulze rule / हार्डी-शुल्जे नियम
- (2) Tyndall effect / टिंडल प्रभाव
- (3) Brownian movement / ब्राउनी गति
- (4) Gold number / गोल्ड संख्या

Correct Answer / सही उत्तर : (1) Hardy-schulze rule / हार्डी-शुल्जे नियम

Solution / हल : The Hardy-Schulze rule explains coagulating power of counter-ions. | हार्डी-शुल्जे नियम विपरीत आयनों की स्कंदन शक्ति समझाता है।

82. Slope = Zero when ?

ढाल (slope) शून्य कब होती है ?

- (1) zero / शून्य
- (2) minimum / न्यूनतम
- (3) infinity / अनंत
- (4) maximum / अधिकतम

Correct Answer / सही उत्तर : (4) maximum / अधिकतम

Solution / हल : Slope = zero at the maximum (or minimum) of a curve. | वक्र के अधिकतम (या न्यूनतम) पर ढाल शून्य होती है।

83. Which of the following act (s) as thermosetting resins ?

निम्नलिखित में कौन तापदृढ़ रेज़िन है ?

- (1) Poly styrene / पॉलिस्टाइरीन
- (2) Polyesters / पॉलिएस्टर
- (3) Polyamides / पॉलिएमाइड
- (4) Polyethylene / पॉलिएथिलीन

Correct Answer / सही उत्तर : (2) Polyesters / पॉलिएस्टर

Solution / हल : Polyesters act as thermosetting resins. | पॉलिएस्टर तापदृढ़ रेज़िन हैं।

84. An IR-spectra is found to have a medium adsorption peak near 3400cm⁻¹ IR-mheske ?

IR-स्पेक्ट्रम में 3400 cm⁻¹ के निकट मध्यम अवशोषण शिखर किसे दर्शाता है ?

- (1) Alcohols / एल्कोहल
- (2) Amines / ऐमीन

(3) Esters / एस्टर

(4) Aldehydes / एल्डिहाइड

Correct Answer / सही उत्तर : (2) Amines / ऐमीन

Solution / हल : A medium peak near 3400 cm⁻¹ indicates N-H of amines. | 3400 cm⁻¹ के निकट मध्यम शिखर ऐमीन के N-H को दर्शाता है।

85. Preparation of initial extract typically implements _____ ?
प्रारंभिक निष्कर्ष (extract) तैयार करने में सामान्यतः किसका उपयोग होता है ?

(1) Polar solvents / ध्रुवीय विलायक

(2) Supercritical fluids / अतिक्रांतिक तरल

(3) Mixture of polar and non-polar solvent / ध्रुवीय व अध्रुवीय विलायक का मिश्रण

(4) Non-polar solvents / अध्रुवीय विलायक

Correct Answer / सही उत्तर : (1) Polar solvents / ध्रुवीय विलायक

Solution / हल : Polar solvents are typically used to prepare the initial extract. | प्रारंभिक निष्कर्ष हेतु सामान्यतः ध्रुवीय विलायक प्रयुक्त होते हैं।

SECTION D - COMPUTER / खण्ड D - कंप्यूटर

86. Which of the following is NOT a component in ASP?

Which of the following is NOT a component in ASP?

(1) Browser Capability / Browser Capability

(2) LinkCounter / LinkCounter

(3) Ad / Ad

(4) Content Linking / Content Linking

Correct Answer / सही उत्तर : (2) LinkCounter / LinkCounter

Solution / हल : Correct option: LinkCounter | सही विकल्प: LinkCounter

87. A computer monitor is also known by the name ?

A computer monitor is also known by the name ?

(1) CPU / CPU

(2) VDU / VDU

(3) LED / LED

(4) CCTV / CCTV

Correct Answer / सही उत्तर : (2) VDU / VDU

Solution / हल : Correct option: VDU | सही विकल्प: VDU

88. In which of the following the Data Structures perform an important role?

डेटा संरचनाएँ निम्नलिखित में किसमें महत्वपूर्ण भूमिका निभाती हैं ?

(1) design / डिज़ाइन

(2) Logic gate / लॉजिक गेट

(3) Program / प्रोग्राम

(4) Input device / इनपुट उपकरण

Correct Answer / सही उत्तर : (3) Program / प्रोग्राम

Solution / हल : Data structures play an important role in a program. | डेटा संरचनाएँ प्रोग्राम में महत्वपूर्ण भूमिका निभाती हैं।

89. 10 nibbles are equal to _____ bits. 10 एफ़ेयेउमे एफ़े ?

10 nibbles are equal to _____ bits. 10 एफ़ेयेउमे एफ़े ?

(1) 80 / 80

(2) 40 / 40

(3) 60 / 60

(4) 20 / 20

Correct Answer / सही उत्तर : (2) 40 / 40

Solution / हल : Correct option: 40 | सही विकल्प: 40

90. An error in a computer is also known as ?

An error in a computer is also known as ?

- (1) none of / none of
- (2) cursor / कर्सर
- (3) bug / बग
- (4) debug / debug

Correct Answer / सही उत्तर : (3) bug / bug

Solution / हल : Correct option: bug | सही विकल्प: bug

91. Which of the following characters is ?

Which of the following characters is ?

- (1) Alphabets / Alphabets
- (2) Underscore / Underscore
- (3) Digits / Digits
- (4) White space characters / White space characters

Correct Answer / सही उत्तर : (4) White space characters / White space characters

Solution / हल : Correct option: White space characters | सही विकल्प: White space characters

92. Considering 2's complement representation for negative numbers, ?

2's पूरक निरूपण में ऋणात्मक संख्या के संदर्भ में -128 कैसे संग्रहीत होगा ?

- (1) 10000001 / 10000001
- (2) 11111111 / 11111111
- (3) 10000000 / 10000000
- (4) 11111110 / 11111110

Correct Answer / सही उत्तर : (3) 10000000 / 10000000

Solution / हल : 2's complement of -128 is 10000000. | -128 का 2's पूरक 10000000 है।

93. Which of these is NOT a keyword used in C language?

Which of these is NOT a keyword used in C language?

- (1) case / case
- (2) do / do
- (3) myfile / myfile
- (4) register / रजिस्टर

Correct Answer / सही उत्तर : (3) myfile / myfile

Solution / हल : Correct option: myfile | सही विकल्प: myfile

94. Which of the following statements is used to make a selection from more than two choices?

दो से अधिक विकल्पों में से चयन हेतु कौन-सा कथन प्रयुक्त होता है ?

- (1) else-if / else-if
- (2) switch / switch
- (3) if-else / if-else
- (4) None of these / इनमें कोई नहीं

Correct Answer / सही उत्तर : (2) switch / switch

Solution / हल : The switch statement selects from more than two choices. | switch कथन दो से अधिक विकल्पों में से चयन करता है।

95. Dynamic RAM (DRAM) is slower than Static RAM ?

Dynamic RAM (DRAM) is slower than Static RAM ?

- (1) DRAM is cheaper / DRAM is cheaper
- (2) DRAM is costlier / DRAM is costlier

(3) DRAM uses flip / DRAM uses flip

(4) DRAM requires refreshing / DRAM requires refreshing

Correct Answer / सही उत्तर : (4) DRAM requires refreshing / DRAM requires refreshing

Solution / हल : Correct option: DRAM requires refreshing | सही विकल्प: DRAM requires refreshing

SECTION E - MENTAL ABILITY / खण्ड E - मानसिक योग्यता

96. And in year 2018, number of boys is increased by 1440 and number of girls is increased by 15%. If in 2018, there were total increase in the number of students is 1725, then find the increased number of boys in the school. (?

And in year 2018, number of boys is increased by 1440 and number of girls is increased by 15%. If in 2018, there were total increase in the number of students is 1725, then find the increased number of boys in the school. (?

(1) 4440 / 4440

(2) 5440 / 5440

(3) 6040 / 6040

(4) 7240 / 7240

Correct Answer / सही उत्तर : (3) 6040 / 6040

Solution / हल : Correct option: 6040 | सही विकल्प: 6040

97. 10% of the inhabitants of a village having died of cholera, a panic set in, during which 25% of the remaining inhabitants left the village. The population is then reduced to 4050. Find the number of original inhabitants ?

10% of the inhabitants of a village having died of cholera, a panic set in, during which 25% of the remaining inhabitants left the village. The population is then reduced to 4050. Find the number of original inhabitants ?

(1) 8000 / 8000

(2) 5000 / 5000

(3) 6000 / 6000

(4) 7000 / 7000

Correct Answer / सही उत्तर : (3) 6000 / 6000

Solution / हल : Correct option: 6000 | सही विकल्प: 6000

98. There are 950 employees in an organization, out of which 28% got promoted. How many employees got promoted? (RBI Assit. 2012)

किसी संगठन में 950 कर्मचारी हैं, जिनमें से 28% पदोन्नत हुए। कितने पदोन्नत हुए ?

(1) 266 / 266

(2) 256 / 256

(3) 216 / 216

(4) 226 / 226

Correct Answer / सही उत्तर : (1) 266 / 266

Solution / हल : 28% of 950 = 266 employees promoted. | 950 का 28% = 266 कर्मचारी पदोन्नत।

99. A 180-metre long train crosses another 270- metre long train running in the opposite direction in 10.8 seconds. If the speed of the first train is 60 kmph, what is the speed of the second train in kmph?

A 180-metre long train crosses another 270- metre long train running in the opposite direction in 10.8 seconds. If the speed of the first train is 60 kmph, what is the speed of the second train in kmph?

(1) 80 / 80

(2) 90 / 90

(3) Can't be determined / Can't be determined

(4) 150 / 150

Correct Answer / सही उत्तर : (2) 90 / 90

Solution / हल : Correct option: 90 | सही विकल्प: 90

100. A contractor to make a mall in 60 days and he employs 30 men. After 30 days it is found that only one-third of the work is completed. How many extra men should he employ so that the work is completed on time?

A contractor to make a mall in 60 days and he employs 30 men. After 30 days it is found that only one-third of the work is completed. How many extra men should he employ so that the work is completed on time?

(1) 30 men / 30 आदमी

(2) 25 men / 25 आदमी

(3) 20 men / 20 आदमी

(4) 40 men / 40 आदमी

Correct Answer / सही उत्तर : (1) 30 men / 30 आदमी

Solution / हल : Correct option: 30 men | सही विकल्प: 30 आदमी

