

UNIVERSITY OF LUCKNOW

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

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

MODEL PAPER - SET 4 / प्रतिदर्श प्रश्नपत्र - सेट 4

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. The functions which are present on one side of Green's theorem are of which kind?

The functions which are present on one side of Green's theorem are of which kind?

- (1) only partial derivatives / only partial derivatives
- (2) discrete derivatives / discrete derivatives
- (3) Continuous partial derivative / Continuous partial derivative
- (4) complete derivatives / complete derivatives

Correct Answer / सही उत्तर : (3) Continuous partial derivative / Continuous partial derivative

Solution / हल : Correct option: Continuous partial derivative | सही विकल्प: Continuous partial derivative

2. What is the remainder when is divided by 7?

What is the remainder when is divided by 7?

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

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

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

3. Which growth curve indicates that, "living organisms is growing in natural environment "?

Which growth curve indicates that, "living organisms is growing in natural environment "?

- (1) parametric curve / parametric curve
- (2) sigmoid growth curve / sigmoid growth curve
- (3) t curve / t curve
- (4) logistic curve / logistic curve

Correct Answer / सही उत्तर : (2) sigmoid growth curve / sigmoid growth curve

Solution / हल : Correct option: sigmoid growth curve | सही विकल्प: sigmoid growth curve

4. A two-digit number is such that the product of its digits 12. When 36 is added to this number, the digits interchange their places. The number is oes Debke ?

A two-digit number is such that the product of its digits 12. When 36 is added to this number, the digits interchange their places. The number is oes Debke ?

- (1) 26 / 26
- (2) 62 / 62
- (3) 36 / 36
- (4) 48 / 48

Correct Answer / सही उत्तर : (1) 26 / 26

Solution / हल : Correct option: 26 | सही विकल्प: 26

5. A manufacturer of steel blades found 5 percent of its blades He sells blades in packets, each containing 5 blades. The probability that a packet contains one blade is ?

A manufacturer of steel blades found 5 percent of its blades He sells blades in packets, each containing 5 blades. The probability that a packet contains one blade is ?

- (1) 0.5 / 0.5

(2) 0.25 / 0.25

(3) e / e

(4) 0.25.e / 0.25.e

Correct Answer / सही उत्तर : (4) 0.25.e / 0.25.e

Solution / हल : Correct option: 0.25.e | सही विकल्प: 0.25.e

6. An equilateral triangle of side 10 m is to be painted on a wall. If the cost of painting is ₹ 15 per m², then the cost to paint the triangle is ?

An equilateral triangle of side 10 m is to be painted on a wall. If the cost of painting is ₹ 15 per m², then the cost to paint the triangle is ?

(1) 649.5 / 649.5

(2) ₹ 549.5 / ₹ 549.5

(3) ₹ 559.5 / ₹ 559.5

(4) 659.5 / 659.5

Correct Answer / सही उत्तर : (1) 649.5 / 649.5

Solution / हल : Correct option: 649.5 | सही विकल्प: 649.5

7. What is the area in between $y = 6x$, $x = 3$ and $x = 3$?

What is the area in between $y = 6x$, $x = 3$ and $x = 3$?

(1) 36 sq. unit / 36 sq. unit

(2) 27 sq. unit / 27 sq. unit

(3) 9 sq. unit / 9 sq. unit

(4) 18 sq. unit / 18 sq. unit

Correct Answer / सही उत्तर : (2) 27 sq. unit / 27 sq. unit

Solution / हल : Correct option: 27 sq. unit | सही विकल्प: 27 sq. unit

8. Change in number of individuals in population over a period of time is called _____ ?

Change in number of individuals in population over a period of time is called _____ ?

(1) exponential growth / चरघातांकी वृद्धि

(2) logistic growth / logistic growth

(3) sigmoid growth / sigmoid growth

(4) population growth / population growth

Correct Answer / सही उत्तर : (4) population growth / population growth

Solution / हल : Correct option: population growth | सही विकल्प: population growth

9. A metric space defined by $\{d(x,y)=r \text{ for all } x,y\}$?

A metric space defined by $\{d(x,y)=r \text{ for all } x,y\}$?

(1) algebra / algebra

(2) open ball / open ball

(3) sphere / sphere

(4) set / set

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

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

10. Let $A = \begin{bmatrix} 0 & b & 7 \end{bmatrix}$ be a matrix with real ?

Let $A = \begin{bmatrix} 0 & b & 7 \end{bmatrix}$ be a matrix with real ?

(1) 58 / 58%

(2) 65 / 65

(3) 40 / 40

(4) 29 / 29

Correct Answer / सही उत्तर : (4) 29 / 29

Solution / हल : Correct option: 29 | सही विकल्प: 29

11. If the coefficient of variation and standard deviation are 60 and 21 respectively, the arithmetic mean of distribution is ?

If the coefficient of variation and standard deviation are 60 and 21 respectively, the arithmetic mean of distribution is ?

- (1) 35 / 3.5%
- (2) 60 / 60
- (3) 21 / 21
- (4) 30 / 30

Correct Answer / सही उत्तर : (1) 35 / 3.5%

Solution / हल : Correct option: 35 | सही विकल्प: 3.5%

12. The sum of the series $1 + + + + ?$

The sum of the series $1 + + + + ?$

- (1) 2 / 2 : 1
- (2) 3e / 3e
- (3) e / e
- (4) 2e e / 2e e

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

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

13. The curves that occur for a distribution in which class - frequencies go on decreasing symmetrically on either side of central value, are called ?

The curves that occur for a distribution in which class - frequencies go on decreasing symmetrically on either side of central value, are called ?

- (1) moderately asymmetrical curves / moderately asymmetrical curves
- (2) U - shaped curves / U - shaped curves
- (3) symmetrical curves / symmetrical curves
- (4) extremely asymmetrical curves / extremely asymmetrical curves

Correct Answer / सही उत्तर : (3) symmetrical curves / symmetrical curves

Solution / हल : Correct option: symmetrical curves | सही विकल्प: symmetrical curves

14. At how many points does the polynomial x^3 ?

At how many points does the polynomial x^3 ?

- (1) 3 / 3 : 1
- (2) 1 / 1 : 1
- (3) 2 / 2 : 1
- (4) 0 / 0

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

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

15. Which theorem states that , "if an entire function is bounded for all values of z, then it is constant"?

Which theorem states that , "if an entire function is bounded for all values of z, then it is constant"?

- (1) Fundamental theorem / Fundamental theorem
- (2) Cauchy theorem / Cauchy theorem
- (3) Liouville's theorem / Liouville's theorem
- (4) Morera theorem / Morera theorem

Correct Answer / सही उत्तर : (3) Liouville's theorem / Liouville's theorem

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

16. The minimum value of the sum of real numbers a ?

The minimum value of the sum of real numbers a ?

- (1) 8 / 8

- (2) 7 / 7
 (3) 9 / 9%
 (4) 6 / 6

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

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

17. Find the radius of convergence of series $1 + x + x^2 x^3 + + \dots$?
 Find the radius of convergence of series $1 + x + x^2 x^3 + + \dots$?

- (1) 3 / 3 : 1
 (2) 0 / 0
 (3) 2 / 2 : 1
 (4) 1 / 1 : 1

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

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

18. If the median of the triangle ABC through A is perpendicular to AB, then the value of $\tan A + 2 \tan B$ is ?
 If the median of the triangle ABC through A is perpendicular to AB, then the value of $\tan A + 2 \tan B$ is ?

- (1) $\tan C / \tan C$
 (2) 0 / 0
 (3) $\sin C / \sin C$
 (4) $\cos C / \cos C$

Correct Answer / सही उत्तर : (2) 0 / 0

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

19. What is the sum of the next three numbers in the sequence?
 What is the sum of the next three numbers in the sequence?

- (1) 74 / 74
 (2) 76 / 76
 (3) 108 / 108
 (4) 109 / 109

Correct Answer / सही उत्तर : (4) 109 / 109

Solution / हल : Correct option: 109 | सही विकल्प: 109

20. How many positive integers not exceeding 1000 are divisible by 7 or 11 ?
 How many positive integers not exceeding 1000 are divisible by 7 or 11 ?

- (1) 220 / 220
 (2) 90 / 90
 (3) 142 / 142
 (4) 12 / 12%

Correct Answer / सही उत्तर : (1) 220 / 220

Solution / हल : Correct option: 220 | सही विकल्प: 220

21. The average of the squares of the numbers $0, 1, 2, \dots, n$ is $\frac{m}{n}$?
 The average of the squares of the numbers $0, 1, 2, \dots, n$ is $\frac{m}{n}$?

- (1) $\frac{2}{3} \frac{n(n+1)}{2} / \frac{2}{3} \frac{n(n+1)}{2}$
 (2) $\frac{n(n+1)(2n+1)}{6} / \frac{n(n+1)(2n+1)}{6}$
 (3) None of these / इनमें कोई नहीं
 (4) $\frac{6}{1} / \frac{6}{1}$

Correct Answer / सही उत्तर : (2) $\frac{n(n+1)(2n+1)}{6} / \frac{n(n+1)(2n+1)}{6}$

Solution / हल : Correct option: $\frac{n(n+1)(2n+1)}{6}$ | सही विकल्प: $\frac{n(n+1)(2n+1)}{6}$

22. Number of zeros in, $1000!$ is ?

Number of zeros in, $1000!$ is ?

- (1) 248 / 248
- (2) 25 / $< 2, 5 >$
- (3) 249 / 249
- (4) 30 / 30

Correct Answer / सही उत्तर : (3) 249 / 249

Solution / हल : Correct option: 249 | सही विकल्प: 249

23. Any non-empty set of \mathbb{R} , which is bounded above, has a _____?
Any non-empty set of \mathbb{R} , which is bounded above, has a _____?

- (1) l.u.b / l.u.b
- (2) one exists infinitely / one exists infinitely
- (3) g.l.b / g.l.b
- (4) both exists finitely / both exists finitely

Correct Answer / सही उत्तर : (1) l.u.b / l.u.b

Solution / हल : Correct option: l.u.b | सही विकल्प: l.u.b

24. How many real solution are there for the x^4 equation ?
How many real solution are there for the x^4 equation ?

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

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

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

25. ap 11. If p is prime, then ?
ap 11. If p is prime, then ?

- (1) Livoullie's theorem / Livoullie's theorem
- (2) Pringsheim's theorem / Pringsheim's theorem
- (3) Fermet's theorem / Fermet's theorem
- (4) Cauchy's theorem / Cauchy's theorem

Correct Answer / सही उत्तर : (3) Fermet's theorem / Fermet's theorem

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

26. In a frequency distribution, the mea.... and median are 21 and 2... frequenctively then its mode
Approximately ?

In a frequency distribution, the mea.... and median are 21 and 2... frequenctively then its mode Approximately ?

- (1) 20.5 / 20.5
- (2) 25.5 / 25.5
- (3) 22 / 22
- (4) 24 / 24

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

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

27. Find the value of integral of f ; where $f(x, y) = (x^2y (x^2 y^2)dy + xy)dx + +$ over the limits ?
Find the value of integral of f ; where $f(x, y) = (x^2y (x^2 y^2)dy + xy)dx + +$ over the limits ?

- (1) 2 / 2 : 1
- (2) 1 / 1 : 1
- (3) 3 / 3 : 1
- (4) 0 / 0

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

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

28. The graph of the equation $r = \sin 4$?

The graph of the equation $r = \sin 4$?

- (1) Ten leaved Rose / Ten leaved Rose
- (2) Four leaved Rose / Four leaved Rose
- (3) Eight leaved Rose / Eight leaved Rose
- (4) Five leaved Rose / Five leaved Rose

Correct Answer / सही उत्तर : (3) Eight leaved Rose / Eight leaved Rose

Solution / हल : Correct option: Eight leaved Rose | सही विकल्प: Eight leaved Rose

29. The value of m for which one of the roots of x^2 ?

The value of m for which one of the roots of x^2 ?

- (1) 0, 1 / 0, 1
- (2) None of these / इनमें कोई नहीं
- (3) 2, 0 x^2 / 2, 0 x^2
- (4) 0, / 0

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

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

30. In the following figure (not to scale), $AB = CD$ and AB and CD are produced to meet at point P . If ?

In the following figure (not to scale), $AB = CD$ and AB and CD are produced to meet at point P . If ?

- (1) 40 / 40
- (2) 30 / 30
- (3) 50 / 50
- (4) 45 / 45

Correct Answer / सही उत्तर : (1) 40 / 40

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

31. If a , b and c are real numbers, then both the roots of the equation $(x$?

If a , b and c are real numbers, then both the roots of the equation $(x$?

- (1) Are real / Are real
- (2) Are negative / Are negative
- (3) Are positive / Are positive
- (4) Do not exist / Do not exist

Correct Answer / सही उत्तर : (1) Are real / Are real

Solution / हल : Correct option: Are real | सही विकल्प: Are real

32. The greatest common divisor of three integers 105, 140 and 350 is ?

The greatest common divisor of three integers 105, 140 and 350 is ?

- (1) 15 / 15%
- (2) 70 / 70
- (3) 35 / 3.5%
- (4) 5 / 5

Correct Answer / सही उत्तर : (3) 35 / 3.5%

Solution / हल : Correct option: 35 | सही विकल्प: 3.5%

33. The number of ways in which 39312 can be resolved into two factors, which are prime to each other, are ?

The number of ways in which 39312 can be resolved into two factors, which are prime to each other, are ?

- (1) 8 / 8

- (2) 4 / 4 : 1
- (3) 6 / 6
- (4) 10 / 1, 0

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

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

34. When the growth rate was 1% per year, the world population in 1965 was 4 billion. If the modeled equation is given by $P = 4(2.1)^t$. Population growth in Sweden in from July 1965 to July 1966 was approx ?
When the growth rate was 1% per year, the world population in 1965 was 4 billion. If the modeled equation is given by $P = 4(2.1)^t$. Population growth in Sweden in from July 1965 to July 1966 was approx ?

- (1) 1640000000 j / 1640000000 j
- (2) 1440000000 / 1440000000
- (3) 1340000000 / 1340000000
- (4) 1540000000 / 1540000000

Correct Answer / सही उत्तर : (1) 1640000000 j / 1640000000 j

Solution / हल : Correct option: 1640000000 j | सही विकल्प: 1640000000 j

35. When we use Mean value theorem for $f(x) = x(x)$?
When we use Mean value theorem for $f(x) = x(x)$?

- (1) 1.764 / 1.764
- (2) 0.138 / 0.138
- (3) 0.317 / 0.317
- (4) 0.236 / 0.236

Correct Answer / सही उत्तर : (4) 0.236 / 0.236

Solution / हल : Correct option: 0.236 | सही विकल्प: 0.236

36. Which one may or may not take form of model?
Which one may or may not take form of model?

- (1) game theoretic models / game theoretic models
- (2) differential equations / differential equations
- (3) statistical models / statistical models
- (4) logical models / logical models

Correct Answer / सही उत्तर : (4) logical models / logical models

Solution / हल : Correct option: logical models | सही विकल्प: logical models

37. What will be the value of xyz if $x + y + z = 0$?

What will be the value of xyz if $x + y + z = 0$?

- (1) xyz / xyz
- (2) $xyz(xz + yz + zx)$ / $xyz(xz + yz + zx)$
- (3) $2xyz$ / $2xyz$
- (4) $3xyz$ / $3xyz$

Correct Answer / सही उत्तर : (4) $3xyz$ / $3xyz$

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

38. If a, b, c, d are four positive real numbers such that $abcd = 1$, then $(1 + a)(1 + b)(1 + c)(1 + d)$ is ?
If a, b, c, d are four positive real numbers such that $abcd = 1$, then $(1 + a)(1 + b)(1 + c)(1 + d)$ is ?

- (1) Greater than or equal to 16 / Greater than or equal to 16
- (2) Less than or equal to 15 / Less than or equal to 15
- (3) Less than or equal to 8 / Less than or equal to 8
- (4) Greater than or equal to 8 / Greater than or equal to 8

Correct Answer / सही उत्तर : (1) Greater than or equal to 16 / Greater than or equal to 16

Solution / हल : Correct option: Greater than or equal to 16 | सही विकल्प: Greater than or equal to 16

39. From the following results of two colleges A and B, find out which of the two is better?

From the following results of two colleges A and B, find out which of the two is better?

- (1) data is not sufficient / data is not sufficient
- (2) college B / college B
- (3) college A / college A
- (4) both are same / both are same

Correct Answer / सही उत्तर : (4) both are same / both are same

Solution / हल : Correct option: both are same | सही विकल्प: both are same

40. The average of the squares of number 0, 1, 2, 3 ?

The average of the squares of number 0, 1, 2, 3 ?

- (1) 6 1 / 6 1
- (2) $(n+1)(2n+1) / 6$ these / $(n+1)(2n+1) / 6$ these
- (3) $n(2n+1) / 2$ 1 $n(2n+1) / n(2n+1) / 2$ 1 $n(2n+1)$
- (4) none of / none of

Correct Answer / सही उत्तर : (1) 6 1 / 6 1

Solution / हल : Correct option: 6 1 | सही विकल्प: 6 1

SECTION B - PHYSICS / खण्ड B - भौतिक विज्ञान

41. In Joule Thomson expansion, the inversion temperature is the temperature below which gas ?

In Joule Thomson expansion, the inversion temperature is the temperature below which gas ?

- (1) shows cooling / shows cooling
- (2) shows heating / shows heating
- (3) none of the above / इनमें कोई नहीं
- (4) obeys Boyle's law / obeys Boyle's law

Correct Answer / सही उत्तर : (1) shows cooling / shows cooling

Solution / हल : Correct option: shows cooling | सही विकल्प: shows cooling

42. Length of the wire is increased by 1 mm on hanging a weight of 1 kg increase in length on hanging a weight of 2 kg will be ?

Length of the wire is increased by 1 mm on hanging a weight of 1 kg increase in length on hanging a weight of 2 kg will be ?

- (1) 0 / 0
- (2) 2 mm / 2 mm
- (3) 1 mm / 1 mm
- (4) 4 mm / 4 mm

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

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

43. A storage battery of e.m.f 8.0V and internal resistance 0.5 is charge by 120V d.c. supply using a series resistor 15.5. The terminal voltage of the battery will be ?

A storage battery of e.m.f 8.0V and internal resistance 0.5 is charge by 120V d.c. supply using a series resistor 15.5. The terminal voltage of the battery will be ?

- (1) 12.5V / 12.5V
- (2) 13V / 13V
- (3) 10.2V 1016 / 10.2V 1016
- (4) 11.5V / 11.5V

Correct Answer / सही उत्तर : (4) 11.5V / 11.5V

Solution / हल : Correct option: 11.5V | सही विकल्प: 11.5V

44. The angular separation, between the two lines λ_1 and λ_2 of neon, 5882Å and 5852Å, in the first order spectrum of a plane transmission grating, having 6000 lines per centimeter, illuminated normally, will be: 103 103 ?
The angular separation, between the two lines λ_1 and λ_2 of neon, 5882Å and 5852Å, in the first order spectrum of a plane transmission grating, having 6000 lines per centimeter, illuminated normally, will be: 103 103 ?

- (1) 1.7×10^{-3} radian / 1.7×10^{-3} radian
- (2) 2.0×10^{-3} radian / 2.0×10^{-3} radian
- (3) 1.8×10^{-3} radian / 1.8×10^{-3} radian
- (4) 1.9×10^{-3} radian / 1.9×10^{-3} radian

Correct Answer / सही उत्तर : (3) 1.8×10^{-3} radian / 1.8×10^{-3} radian

Solution / हल : Correct option: 1.8×10^{-3} radian | सही विकल्प: 1.8×10^{-3} radian

45. A businessman spends 100 days per year in aeroplane. If the speed of aeroplane be 1080 km/hr, according to principle of relativity increase in his age as compared to person at rest on earth will be ?
A businessman spends 100 days per year in aeroplane. If the speed of aeroplane be 1080 km/hr, according to principle of relativity increase in his age as compared to person at rest on earth will be ?

- (1) Smaller by a factor = 11012 / Smaller by a factor = 11012
- (2) Larger by a factor = 11016 / Larger by a factor = 11016
- (3) Smaller by a factor = 11016 / Smaller by a factor = 11016
- (4) Larger by a factor = 11012 / Larger by a factor = 11012

Correct Answer / सही उत्तर : (1) Smaller by a factor = 11012 / Smaller by a factor = 11012

Solution / हल : Correct option: Smaller by a factor = 11012 | सही विकल्प: Smaller by a factor = 11012

46. Which property of light shows it is a transverse wave?
Which property of light shows it is a transverse wave?

- (1) Polarization / ध्रुवण
- (2) Interference / व्यतिकरण
- (3) Diffraction / विवर्तन
- (4) Refraction / अपवर्तन

Correct Answer / सही उत्तर : (1) Polarization / ध्रुवण

Solution / हल : Correct option: Polarization | सही विकल्प: ध्रुवण

47. A body of mass 4 kg is moving in a circle of radius 1m with an angular velocity of 2 radian/sec. Find the Centripetal force acting on body ?

A body of mass 4 kg is moving in a circle of radius 1m with an angular velocity of 2 radian/sec. Find the Centripetal force acting on body ?

- (1) 20N / 20N
- (2) 8N / 8N
- (3) 24N / 24N
- (4) 16N / 16N

Correct Answer / सही उत्तर : (4) 16N / 16N

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

48. The internal resistance of an ideal constant voltage source is ?
The internal resistance of an ideal constant voltage source is ?

- (1) None of the above / इनमें कोई नहीं
- (2) Zero / शून्य
- (3) equal to resistance of load / equal to resistance of load
- (4) Infinite / Infinite

Correct Answer / सही उत्तर : (2) Zero / शून्य

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

49. The speed of a boat in still water is 10 km/hr. If the boat crosses a 2 km wide river in 15 min along the shortest possible route, the water velocity in the river is ?

The speed of a boat in still water is 10 km/hr. If the boat crosses a 2 km wide river in 15 min along the shortest possible route, the water velocity in the river is ?

- (1) 4 km/hr / 4 km/hr
- (2) 6 km/hr / 6 km/hr
- (3) 3 km/hr / 3 km/hr
- (4) 5 km/hr / 5 km/hr

Correct Answer / सही उत्तर : (2) 6 km/hr / 6 km/hr

Solution / हल : Correct option: 6 km/hr | सही विकल्प: 6 km/hr

50. The ratio of earth's magnetic intensities at its pole and at equator is ?

The ratio of earth's magnetic intensities at its pole and at equator is ?

- (1) 1.5 / 15%
- (2) 2.0 / 20
- (3) 1.0 / 1, 0
- (4) 2.5 / < 2, 5 >

Correct Answer / सही उत्तर : (2) 2.0 / 20

Solution / हल : Correct option: 2.0 | सही विकल्प: 20

51. A converging lenses of focal length f is placed in contact with a diverging lens of focal length $3f$. The combination is ?

A converging lenses of focal length f is placed in contact with a diverging lens of focal length $3f$. The combination is ?

- (1) A converging lens of focal length $2f$ / A converging lens of focal length $2f$
- (2) A diverging lens of focal length $3f$ / A diverging lens of focal length $3f$
- (3) A diverging lens of focal length $3f/2$ / A diverging lens of focal length $3f/2$
- (4) A converging lens of focal length $3f/2$ / A converging lens of focal length $3f/2$

Correct Answer / सही उत्तर : (4) A converging lens of focal length $3f/2$ / A converging lens of focal length $3f/2$

Solution / हल : Correct option: A converging lens of focal length $3f/2$ | सही विकल्प: A converging lens of focal length $3f/2$

52. Rain is falling vertically on the ground at speed $5\sqrt{3}$ m/s. If a man walks towards the East with speed 5 m/s, he will feel the rain falling at what angle to the vertical?

Rain is falling vertically on the ground at speed $5\sqrt{3}$ m/s. If a man walks towards the East with speed 5 m/s, he will feel the rain falling at what angle to the vertical?

- (1) 0° / 0
- (2) 45° / 45°
- (3) 60° / 60
- (4) 30° / 30

Correct Answer / सही उत्तर : (4) 30° / 30

Solution / हल : Correct option: 30° | सही विकल्प: 30

53. If A and B are tensors of rank 2 , then what ij will be the rank of tensor $A + B$. ij ?

If A and B are tensors of rank 2 , then what ij will be the rank of tensor $A + B$. ij ?

- (1) 3 / 3 : 1
- (2) 4 / 4 : 1
- (3) 0 / 0
- (4) 2 / 2 : 1

Correct Answer / सही उत्तर : (4) 2 / 2 : 1

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

54. How much force is required to change the velocity of a body of mass 1 kg from 20 m/s to 30 m/s in 2 seconds?

How much force is required to change the velocity of a body of mass 1 kg from 20 m/s to 30 m/s in 2 seconds?

- (1) 1 N / 1 N
- (2) 25 N / 25 N
- (3) 5 N / 5 N
- (4) 10 N / 10 N

Correct Answer / सही उत्तर : (3) 5 N / 5 N

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

55. A car moving at 30 m/s is approaching a factory, whose whistle has a frequency of 500 Hz. If the speed of sound in air is 340 m/s, what is the apparent frequency of whistle as heard by the car driver?

A car moving at 30 m/s is approaching a factory, whose whistle has a frequency of 500 Hz. If the speed of sound in air is 340 m/s, what is the apparent frequency of whistle as heard by the car driver?

- (1) 544 Hz / 544 Hz
- (2) 600 Hz / 600 Hz
- (3) 500 Hz / 500 Hz
- (4) 480 Hz / 480 Hz

Correct Answer / सही उत्तर : (1) 544 Hz / 544 Hz

Solution / हल : Correct option: 544 Hz | सही विकल्प: 544 Hz

56. Which of the following laws has the same place in magnetostatics as the Gauss's law has in electrostatics?

Which of the following laws has the same place in magnetostatics as the Gauss's law has in electrostatics?

- (1) Ampere's Law / Ampere's Law
- (2) Faraday's Law / Faraday's Law
- (3) Coulomb's Law / Coulomb's Law
- (4) Bio-Savart Law / Bio-Savart Law

Correct Answer / सही उत्तर : (4) Bio-Savart Law / Bio-Savart Law

Solution / हल : Correct option: Bio-Savart Law | सही विकल्प: Bio-Savart Law

57. The total energy of a particle executing simple harmonic motion depends upon its ?

The total energy of a particle executing simple harmonic motion depends upon its ?

- (1) amplitude only / amplitude only
- (2) frequency only / frequency only
- (3) initial state / initial state
- (4) frequency and amplitude both / frequency and amplitude both

Correct Answer / सही उत्तर : (4) frequency and amplitude both / frequency and amplitude both

Solution / हल : Correct option: frequency and amplitude both | सही विकल्प: frequency and amplitude both

58. A zone plate behaves like a ?

A zone plate behaves like a ?

- (1) Convex lens / Convex lens
- (2) Glass plate / Glass plate
- (3) Concave lens / Concave lens
- (4) Plane mirror / Plane mirror

Correct Answer / सही उत्तर : (1) Convex lens / Convex lens

Solution / हल : Correct option: Convex lens | सही विकल्प: Convex lens

59. A rod of length is clamped at both ends as well as at the middle point. The lowest possible frequency of vibration (velocity of sound = v) is ?

A rod of length is clamped at both ends as well as at the middle point. The lowest possible frequency of vibration (velocity of sound = v) is ?

- (1) v/l / v/l
- (2) $v/4l$ / $v/4l$
- (3) $v/2l$ / $v/2l$
- (4) $2v/l$ / $2v/l$

Correct Answer / सही उत्तर : (1) v/l / v/l

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

60. The coherence time of laser beam of 10^{-5} wavelength 7400 is $4 \times$ second . The coherence length will be ?

The coherence time of laser beam of 10^{-5} wavelength 7400 is $4 \times$ second . The coherence length will be ?

- (1) 11.2 km / 11.2 km
- (2) 10 km / 10 km
- (3) 12 km / 12 km
- (4) 5 km / 5 km

Correct Answer / सही उत्तर : (3) 12 km / 12 km

Solution / हल : Correct option: 12 km | सही विकल्प: 12 km

SECTION C - CHEMISTRY / खण्ड C - रसायन विज्ञान

61. Which of the following pairs of solutions shows large positive deviations from ideal behavior?
निम्नलिखित में कौन-सा विलयन युग्म आदर्श व्यवहार से अधिक धनात्मक विचलन दर्शाता है ?

- (1) Water-propyl alcohol / जल-प्रोपिल एल्कोहल
- (2) Water-nitric acid / जल-नाइट्रिक अम्ल
- (3) Cyclohexane-carbon tetrachloride / साइक्लोहेक्सेन-कार्बन टेट्राक्लोराइड
- (4) Acetone-chloroform / एसीटोन-क्लोरोफॉर्म

Correct Answer / सही उत्तर : (1) Water-propyl alcohol / जल-प्रोपिल एल्कोहल

Solution / हल : Water-propyl alcohol shows large positive deviation. | जल-प्रोपिल एल्कोहल अधिक धनात्मक विचलन दर्शाता है।

62. By using SOCl_2 , alcohols are converted into: 2SOCl_2 ?

SOCl_2 का उपयोग कर एल्कोहल किसमें बदलते हैं ?

- (1) Alkanes / एल्केन
- (2) Carboxylic acids / कार्बोक्सिलिक अम्ल
- (3) Alkenes / एल्कीन
- (4) Alkyl halides / ऐल्किल हैलाइड

Correct Answer / सही उत्तर : (4) Alkyl halides / ऐल्किल हैलाइड

Solution / हल : SOCl_2 converts alcohols into alkyl halides (chlorides). | SOCl_2 एल्कोहल को ऐल्किल हैलाइड (क्लोराइड) में बदलता है।

63. A preliminary confirmatory test that can be done for identification of flavonoids is _____ ?
फ्लेवोनाइड की पहचान का प्रारंभिक पुष्टि परीक्षण कौन-सा है ?

- (1) Silver mirror test / सिल्वर मिरर परीक्षण
- (2) Sodium hydroxide test / सोडियम हाइड्रॉक्साइड परीक्षण
- (3) Ferric chloride test / फेरिक क्लोराइड परीक्षण
- (4) Conc. Sulphuric acid test / सांद्र सल्फ्यूरिक अम्ल परीक्षण

Correct Answer / सही उत्तर : (2) Sodium hydroxide test / सोडियम हाइड्रॉक्साइड परीक्षण

Solution / हल : Flavonoids give a confirmatory sodium hydroxide test. | फ्लेवोनोंड सोडियम हाइड्रॉक्साइड पुष्टि परीक्षण देते हैं।

64. Oxidation of Tollen's reagent is done by which of the following?
टॉलेन अभिकर्मक का ऑक्सीकरण निम्नलिखित में किससे होता है ?

- (1) Glucose / ग्लूकोज
- (2) Sucrose / सुक्रोज
- (3) Cellulose / सेल्यूलोज
- (4) Fructose / फ्रक्टोज

Correct Answer / सही उत्तर : (1) Glucose / ग्लूकोज

Solution / हल : Tollen's reagent is oxidised (reduced) by glucose (reducing sugar). | टॉलेन अभिकर्मक ग्लूकोज (अपचायी शर्करा) से ऑक्सीकृत होता है।

65. HgS possesses a _____ ?
HgS किस संरचना का होता है ?

- (1) BCC / BCC
- (2) FCC / FCC
- (3) Cubic centre / घनीय केंद्र
- (4) Rhombohedral / समचतुर्भुजीय

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

Solution / हल : HgS has an FCC structure. | HgS की संरचना FCC है।

66. Xenon trioxide possesses ?
जेनॉन ट्राइऑक्साइड की संरचना कैसी है ?

- (1) trigonal pyramidal structure / त्रिकोणीय पिरामिडीय
- (2) square-pyramidal structure / वर्ग-पिरामिडीय
- (3) T-shaped structure / T-आकार
- (4) irregular tetrahedral structure / अनियमित चतुष्फलकीय

Correct Answer / सही उत्तर : (1) trigonal pyramidal structure / त्रिकोणीय पिरामिडीय

Solution / हल : Xenon trioxide (XeO₃) has a trigonal pyramidal structure. | जेनॉन ट्राइऑक्साइड (XeO₃) त्रिकोणीय पिरामिडीय है।

67. Transition metal compounds are usually colored. This is because of the electronic transition ?
संक्रमण धातु यौगिक प्रायः रंगीन होते हैं — किस इलेक्ट्रॉनिक संक्रमण के कारण ?

- (1) from d-orbital to s-orbital / d-कक्षक से s-कक्षक
- (2) within d-orbitals / d-कक्षकों के भीतर
- (3) from d-orbital to f-orbital / d-कक्षक से f-कक्षक
- (4) from d-orbital to p-orbital / d-कक्षक से p-कक्षक

Correct Answer / सही उत्तर : (2) within d-orbitals / d-कक्षकों के भीतर

Solution / हल : Colour of transition compounds is due to d-d transitions within d-orbitals. | संक्रमण यौगिकों का रंग d-कक्षकों के भीतर d-d संक्रमण से है।

68. Which of the following compounds has the electron-pair geometry as trigonal occupied by lone pair of electrons?

निम्नलिखित में किस यौगिक की त्रिकोणीय इलेक्ट्रॉन-युग्म ज्यामिति में एकाकी युग्म होता है ?

- (1) Alkyl magnesium bromide / ऐल्किल मैग्नीशियम ब्रोमाइड
- (2) Xenon difluoride / जेनॉन डाइफ्लोराइड
- (3) Dichloro-diamino-platinum / डाइक्लोरो-डाइएमिनो-प्लैटिनम
- (4) Aluminium chloride / ऐलुमिनियम क्लोराइड

Correct Answer / सही उत्तर : (2) Xenon difluoride / जेनॉन डाइफ्लोराइड

Solution / हल : Xenon difluoride has trigonal electron-pair geometry with lone pairs. | ज़ेनॉन डाइफ्लोराइड की त्रिकोणीय इलेक्ट्रॉन-युग्म ज्यामिति में एकाकी युग्म होते हैं।

69. The type of bonding predominant in polymers is : yengueke ?
बहुलकों में प्रमुख बंधन किस प्रकार का होता है ?

- (1) Covalent / सहसंयोजक
- (2) Ionic / आयनिक
- (3) Dipole forces / द्विध्रुव बल
- (4) Metallic / धात्विक

Correct Answer / सही उत्तर : (1) Covalent / सहसंयोजक

Solution / हल : Bonding in polymers is predominantly covalent. | बहुलकों में बंधन मुख्यतः सहसंयोजक होता है।

70. Materials possessing both amorphous and polycrystalline behaviour with abrupt changes 37 ?
अनाकार व बहुक्रिस्टलीय दोनों व्यवहार वाले तथा क्रिस्टल अभिविन्यास में अचानक परिवर्तन वाले पदार्थ क्या हैं ?

- (1) Glass / काँच
- (2) Ceramics / सेरामिक
- (3) Carbenes / कार्बीन
- (4) Silicates / सिलिकेट

Correct Answer / सही उत्तर : (2) Ceramics / सेरामिक

Solution / हल : Ceramics show both amorphous and polycrystalline behaviour. | सेरामिक अनाकार व बहुक्रिस्टलीय दोनों व्यवहार दिखाते हैं।

71. According to CFT (crystal field theory) $[\text{Ni}(\text{CN})_4]^{2-}$ has _____ ?
CFT अनुसार $[\text{Ni}(\text{CN})_4]^{2-}$ की संरचना क्या है ?

- (1) Square planar structure / वर्ग समतलीय संरचना
- (2) Octahedral structure / अष्टफलकीय संरचना
- (3) Triagonal structure / त्रिकोणीय संरचना
- (4) Tetrahedral structure / चतुष्फलकीय संरचना

Correct Answer / सही उत्तर : (1) Square planar structure / वर्ग समतलीय संरचना

Solution / हल : By CFT, $[\text{Ni}(\text{CN})_4]^{2-}$ is square planar. | CFT अनुसार $[\text{Ni}(\text{CN})_4]^{2-}$ वर्ग समतलीय है।

72. Metallic crystal structure of calcium ?
कैल्शियम की धात्विक क्रिस्टल संरचना क्या है ?

- (1) Simple cubic / साधारण घन
- (2) Body centered cubic / अंतःकेंद्रित घन
- (3) Face centered cubic / फलक-केंद्रित घन
- (4) Hexagonal close packing / षट्कोणीय निविड संकुलन

Correct Answer / सही उत्तर : (3) Face centered cubic / फलक-केंद्रित घन

Solution / हल : Calcium has a face-centred cubic metallic structure. | कैल्शियम की फलक-केंद्रित घन धात्विक संरचना है।

73. Which of the following methods is not used for soil protection?
निम्नलिखित में कौन-सी विधि मृदा संरक्षण हेतु प्रयुक्त नहीं होती ?

- (1) Uses of excess fertilisers / अधिक उर्वरकों का प्रयोग
- (2) Minimising use of fossil fuels / जीवाश्म ईंधन कम करना
- (3) Neutralisation of acid in rain by adding lime / चूना मिलाकर अम्ल उदासीन करना
- (4) Afforestation / वनरोपण

Correct Answer / सही उत्तर : (1) Uses of excess fertilisers / अधिक उर्वरकों का प्रयोग

Solution / हल : Excess fertiliser use is not a method of soil protection. | अधिक उर्वरक प्रयोग मृदा संरक्षण की विधि नहीं है।

74. Compound used as intercalating agent is _____ ?

अंतर्वेशी (intercalating) एजेंट के रूप में प्रयुक्त यौगिक कौन-सा है ?

- (1) EtBr / EtBr
- (2) EDTA / EDTA
- (3) CsCl / CsCl
- (4) SDS / SDS

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

Solution / हल : EtBr (ethidium bromide) is the intercalating agent. | EtBr (एथिडियम ब्रोमाइड) अंतर्वेशी एजेंट है।

75. Which of the following systems has 7 symmetry elements?

निम्नलिखित में किस तंत्र में 7 सममिति तत्व होते हैं ?

- (1) Cubic / घनीय
- (2) Triclinic / त्रिनताक्ष
- (3) Orthorhombic / विषमलंबाक्ष (Orthorhombic)
- (4) Tetragonal / चतुष्कोणीय

Correct Answer / सही उत्तर : (3) Orthorhombic / विषमलंबाक्ष (Orthorhombic)

Solution / हल : The orthorhombic system has 7 symmetry elements. | विषमलंबाक्ष तंत्र में 7 सममिति तत्व होते हैं।

76. A sample of mixture of molecules with various chain lengths and molar masses constitute _____ ?

विभिन्न श्रृंखला लंबाई और मोलर द्रव्यमान वाले अणुओं का मिश्रण क्या बनाता है ?

- (1) Monodisperse polymer / एकपरिक्षेपी बहुलक
- (2) Polydisperse polymer / बहुपरिक्षेपी बहुलक
- (3) Protein / प्रोटीन
- (4) Peptide / पेप्टाइड

Correct Answer / सही उत्तर : (2) Polydisperse polymer / बहुपरिक्षेपी बहुलक

Solution / हल : Molecules with varied chain lengths/molar masses form a polydisperse polymer. | विभिन्न श्रृंखला/मोलर द्रव्यमान वाले अणु बहुपरिक्षेपी बहुलक बनाते हैं।

77. Identify the compound E in the following reaction scheme, ?

निम्न अभिक्रिया योजना में यौगिक E को पहचानिए ?

- (1) Benzene sulphonic acid / बेन्जीन सल्फोनिक अम्ल
- (2) p-Nitrophenol / p-नाइट्रोफिनॉल
- (3) Chlorobenzene / क्लोरोबेन्जीन
- (4) Phenol / फिनॉल

Correct Answer / सही उत्तर : (4) Phenol / फिनॉल

Solution / हल : Compound E in the scheme is phenol. | योजना में यौगिक E फिनॉल है।

78. Which of the following does not react with $K_2Cr_2O_7$?

निम्नलिखित में कौन $K_2Cr_2O_7$ से अभिक्रिया नहीं करता ?

- (1) All alcohol / सभी एल्कोहल
- (2) Secondary alcohol / द्वितीयक एल्कोहल
- (3) Tertiary alcohol / तृतीयक एल्कोहल
- (4) Primary alcohol / प्राथमिक एल्कोहल

Correct Answer / सही उत्तर : (3) Tertiary alcohol / तृतीयक एल्कोहल

Solution / हल : Tertiary alcohols do not react with $K_2Cr_2O_7$. | तृतीयक एल्कोहल $K_2Cr_2O_7$ से अभिक्रिया नहीं करते।

79. The absolute configuration of the asymmetric centres present in the following optically active molecule ?

दिए गए प्रकाशिक सक्रिय अणु के असममित केंद्रों का परम विन्यास क्या है ?

- (1) 1R, 2S / 1R, 2S

(2) 1S, 2R / 1S, 2R

(3) 1S, 2S / 1S, 2S

(4) 1R, 2R / 1R, 2R

Correct Answer / सही उत्तर : (2) 1S, 2R / 1S, 2R

Solution / हल : The absolute configuration is 1S, 2R (per key). | परम विन्यास 1S, 2R है (कुंजी अनुसार)।

80. Chlorobenzene is less reactive towards nucleophilic substitution reactions when compared to chloroethane. This ?

Chlorobenzene is less reactive towards nucleophilic substitution reactions when compared to chloroethane. This ?

(1) the hyper conjugative effect / the hyper conjugative effect

(2) the inductive effect by phenyl group / the inductive effect by phenyl group

(3) the increased bond strength by resonance effect / the increased bond strength by resonance effect

(4) the formation of less stable carbonium ion / the formation of less stable carbonium ion

Correct Answer / सही उत्तर : (3) the increased bond strength by resonance effect / the increased bond strength by resonance effect

Solution / हल : Correct option: the increased bond strength by resonance effect | सही विकल्प: the increased bond strength by resonance effect

81. Which of the following colligative properties is used to determine the molecular mass of proteins?

प्रोटीन के अणु द्रव्यमान निर्धारण हेतु कौन-सा अणुसंख्य गुण प्रयुक्त होता है ?

(1) Depression in freezing point / हिमांक अवनमन

(2) Relative lowering of vapour pressure / वाष्पदाब का आपेक्षिक अवनमन

(3) Elevation of boiling point / क्वथनांक उन्नयन

(4) Osmotic pressure / परासरण दाब

Correct Answer / सही उत्तर : (4) Osmotic pressure / परासरण दाब

Solution / हल : Osmotic pressure is used to find the molecular mass of proteins. | प्रोटीन का अणु द्रव्यमान परासरण दाब से ज्ञात होता है।

82. Ionic solids are only soluble in _____ ?

आयनिक ठोस केवल किसमें घुलनशील होते हैं ?

(1) Extremely Polar solvents / अत्यंत ध्रुवीय विलायक

(2) Mix of non-polar and polar solvents / अध्रुवीय व ध्रुवीय का मिश्रण

(3) Supercritical solvents / अतिक्रांतिक विलायक

(4) Non-polar solvents / अध्रुवीय विलायक

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

Solution / हल : Ionic solids dissolve only in extremely polar solvents. | आयनिक ठोस केवल अत्यंत ध्रुवीय विलायक में घुलते हैं।

83. Which of the following is not responsible for water pollution?

निम्नलिखित में कौन जल प्रदूषण के लिए उत्तरदायी नहीं है ?

(1) Sewage waste / सीवेज अपशिष्ट

(2) Bio-degradable waste / जैव-निम्नीकरणीय अपशिष्ट

(3) Pesticides / कीटनाशी

(4) Radio-active waste / रेडियोधर्मी अपशिष्ट

Correct Answer / सही उत्तर : (2) Bio-degradable waste / जैव-निम्नीकरणीय अपशिष्ट

Solution / हल : Bio-degradable waste is not responsible for water pollution (others are). | जैव-निम्नीकरणीय अपशिष्ट जल प्रदूषण के लिए उत्तरदायी नहीं है।

84. Blast furnace is employed in the metallurgy (extraction) of ?

ब्लास्ट फर्नेस किसकी धातुकर्म (निष्कर्षण) में प्रयुक्त होती है ?

- (1) Au / Au
- (2) Fe / Fe
- (3) Ag / Ag
- (4) Cu / Cu

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

Solution / हल : Blast furnace is used in extraction of iron (Fe). | ब्लैस्ट फर्नेस लोहे (Fe) के निष्कर्षण में प्रयुक्त होती है।

85. The closeness of obtained values to the true value is called _____ ?

The closeness of obtained values to the true value is called _____ ?

- (1) Ruggedness / Ruggedness
- (2) Error / Error
- (3) Precision / Precision
- (4) Accuracy / Accuracy

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

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

SECTION D - COMPUTER / खण्ड D - कंप्यूटर

86. The program instructions are represented in binary and stored in the _____ from which they are fetched, decoded and executed by the CPU ?

प्रोग्राम निर्देश बाइनरी में किसमें संग्रहीत होते हैं जहाँ से CPU उन्हें fetch-decode-execute करता है ?

- (1) memory / मेमोरी (memory)
- (2) chip / चिप
- (3) memory and chip / मेमोरी व चिप
- (4) control unit / कंट्रोल यूनिट

Correct Answer / सही उत्तर : (1) memory / मेमोरी (memory)

Solution / हल : Program instructions are stored in memory for fetch-decode-execute. | प्रोग्राम निर्देश मेमोरी में संग्रहीत होते हैं (fetch-decode-execute)।

87. Considering signed magnitude representation for negative numbers, -42 will be stored into an 8-bit memory space as \$e+Ceelcke ?

Considering signed magnitude representation for negative numbers, -42 will be stored into an 8-bit memory space as \$e+Ceelcke ?

- (1) 10101010 / 10101010
- (2) 10100001 / 10100001
- (3) 10110111 / 10110111
- (4) 1011010 / 1011010

Correct Answer / सही उत्तर : (1) 10101010 / 10101010

Solution / हल : Correct option: 10101010 | सही विकल्प: 10101010

88. As per classification which cannot be called ?

As per classification which cannot be called ?

- (1) Workstations / Workstations
- (2) Minicomputer / Minicomputer
- (3) Ubuntu / Ubuntu
- (4) Mainframe / Mainframe

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

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

89. Which is not a secondary storage device?

Which is not a secondary storage device?

- (1) Floppy / फ्लॉपी

(2) DVD-ROM / DVD-ROM

(3) RAM / RAM

(4) CD / Cd

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

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

90. Trackball is which of the following devices?

Trackball is which of the following devices?

(1) Output device / Output device

(2) Touchpad / Touchpad

(3) Input reader / Input reader

(4) Barcode / Barcode

Correct Answer / सही उत्तर : (3) Input reader / Input reader

Solution / हल : Correct option: Input reader | सही विकल्प: Input reader

91. Which among the following is NOT an operating system?

निम्नलिखित में कौन ऑपरेटिंग सिस्टम नहीं है ?

(1) Router / राउटर

(2) Windows / Windows

(3) IOS / IOS

(4) Android / एंड्रॉइड

Correct Answer / सही उत्तर : (1) Router / राउटर

Solution / हल : A router is not an operating system. | राउटर ऑपरेटिंग सिस्टम नहीं है।

92. Which of the following provides internal storage to the CPU?

Which of the following provides internal storage to the CPU?

(1) Register / रजिस्टर

(2) RAM / RAM

(3) Hard disk / हार्ड डिस्क

(4) Register and RAM / Register and RAM

Correct Answer / सही उत्तर : (1) Register / रजिस्टर

Solution / हल : Correct option: Register | सही विकल्प: रजिस्टर

93. Which among the following units is used to count printers?

Which among the following units is used to count printers?

(1) CPM / CPM

(2) PPM / PPM

(3) LPM / LPM

(4) BIT / बिट

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

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

94. Programming language Java was developed by _____ ?

Programming language Java was developed by _____ ?

(1) Jaap Hartsen / Jaap Hartsen

(2) Paul Allen / Paul Allen

(3) James Gosling / James Gosling

(4) Charles Simoni / Charles Simoni

Correct Answer / सही उत्तर : (3) James Gosling / James Gosling

Solution / हल : Correct option: James Gosling | सही विकल्प: James Gosling

95. Amongst following, which is the smallest unit of storage ?

Amongst following, which is the smallest unit of storage ?

- (1) GB / GB
- (2) MB / MB
- (3) KB / KB
- (4) TB / TB

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

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

SECTION E - MENTAL ABILITY / खण्ड E - मानसिक योग्यता

96. If the cost price of 15 articles be equal to the selling price of 20 articles, then find the loss% in the transaction. (?

If the cost price of 15 articles be equal to the selling price of 20 articles, then find the loss% in the transaction. (?

- (1) 16% / 16
- (2) 20% / 20
- (3) 26% / 26
- (4) 25% / < 2, 5 >

Correct Answer / सही उत्तर : (4) 25% / < 2, 5 >

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

97. The rate of interest per annum is: (?
प्रति वर्ष ब्याज दर क्या है ?

- (1) 12 % 2 / 12 % 2
- (2) 11% 1 / < 1, 1, 1,... >
- (3) 10% / 1, 0
- (4) 12% / 12%

Correct Answer / सही उत्तर : (3) 10% / 1, 0

Solution / हल : The rate of interest per annum is 10%. | प्रति वर्ष ब्याज दर 10% है।

98. 56 workers can finish a piece of work in 14 days. If the work is to be completed in 8 days, then how many extra workers are required?

56 workers can finish a piece of work in 14 days. If the work is to be completed in 8 days, then how many extra workers are required?

- (1) 36 / 36
- (2) 42 / 42
- (3) 48 / 48
- (4) 44 / 44

Correct Answer / सही उत्तर : (2) 42 / 42

Solution / हल : Correct option: 42 | सही विकल्प: 42

99. A boat goes 30 km downstream and while returning covered only 80% of distance that covered in downstream. If boat 4 hr more to cover upstream than downstream then find the speed of boat in still water (km/hr) if speed of 25 stream is m/sec ? (?

A boat goes 30 km downstream and while returning covered only 80% of distance that covered in downstream. If boat 4 hr more to cover upstream than downstream then find the speed of boat in still water (km/hr) if speed of 25 stream is m/sec ? (?

- (1) 4.2 km/hr / 4.2 km/hr
- (2) 5.6 km/hr / 5.6 km/hr
- (3) 8 km/hr / 8 km/hr
- (4) 2.8 km/hr / 2.8 km/hr

Correct Answer / सही उत्तर : (2) 5.6 km/hr / 5.6 km/hr

Solution / हल : Correct option: 5.6 km/hr | सही विकल्प: 5.6 km/hr

100. If the time taken by boat to go 28 km downstream and 30 km upstream is 2.5 h. If the ratio of the downstream and upstream speed is 7 : 5, then find the speed of the boat in still water. (?

यदि नाव 28 किमी अनुप्रवाह व 30 किमी उर्ध्वप्रवाह 2.5 घं में तय करे व अनुप्रवाह:उर्ध्वप्रवाह चाल 7:5 हो, तो शांत जल में नाव की चाल क्या है ?

- (1) 4 kmph / 4 किमी/घं
- (2) 12 kmph / 12 किमी/घं
- (3) 24 kmph / 24 किमी/घं
- (4) 16 kmph / 16 किमी/घं

Correct Answer / सही उत्तर : (3) 24 kmph / 24 किमी/घं

Solution / हल : Speed of boat in still water = 24 kmph. | शांत जल में नाव की चाल = 24 किमी/घं।

