

UNIVERSITY OF LUCKNOW

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

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

MODEL PAPER - SET 15 / प्रतिदर्श प्रश्नपत्र - सेट 15

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

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

(1) None of these / इनमें कोई नहीं

(2) 10 / 1, 0

(3) 9 / 9%

(4) 7 / 7

Correct Answer / सही उत्तर : (1) None of these / इनमें कोई नहीं

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

2. 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) 128.8 km / 128.8 km

(3) 129.7 m / 129.7 m

(4) 124.8 m / 124.8 m

Correct Answer / सही उत्तर : (2) 128.8 km / 128.8 km

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

3. 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) Green's theorem / Green's theorem

(2) Riemann equation / Riemann equation

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

(4) Sandwich theorem / Sandwich theorem

Correct Answer / सही उत्तर : (1) Green's theorem / Green's theorem

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

4. 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 $x = 4t$ 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 ?

(1) (2, 2) / 22

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

(3) (2, 4) / 24

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

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

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

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

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

- (1) $3^4 / 3 : 4$
- (2) $3^7 / 3^7$
- (3) $3^5 / 3.5\%$
- (4) $3^6 / 3^6$

Correct Answer / सही उत्तर : (1) $3^4 / 3 : 4$

Solution / हल : Correct option: 3^4 | सही विकल्प: $3 : 4$

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

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

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

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

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

7. 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) $440 / 440$
- (3) $442 / 442$
- (4) $435 / 435$

Correct Answer / सही उत्तर : (2) $440 / 440$

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

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

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

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

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

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

9. The sequence given by interval $[0, 1]$ is bounded ?

The sequence given by interval $[0, 1]$ is bounded ?

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

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

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

10. Which one is not in the automorphism group?

Which one is not in the automorphism group?

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

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

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

11. 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) 4 / 4 : 1
- (2) 0 / 0
- (3) can not say / can not say
- (4) 8 / 8

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

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

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

Correct Answer / सही उत्तर : (3) 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

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

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

Correct Answer / सही उत्तर : (3) $b + a = c + b / b + a = c + b$

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

14. 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) atleast 2 / atleast 2
- (2) atmost 5 / atmost 5
- (3) exactly 3 / exactly 3
- (4) atleast 5 / atleast 5

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

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

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

Correct Answer / सही उत्तर : (1) Picard's theorem / Picard's theorem

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

16. A 6 feet tall man finds that the angle of elevation of the top of a 24 feet height pillar and the angle of depression of its base are complementary angles. The distance of the man from the pillar is ?

A 6 feet tall man finds that the angle of elevation of the top of a 24 feet height pillar and the angle of depression of its base are complementary angles. The distance of the man from the pillar is ?

- (1) 23 feet / 23 feet
- (2) 83 feet / 83 feet
- (3) 63 feet / 63 feet
- (4) None of these / इनमें कोई नहीं

Correct Answer / सही उत्तर : (3) 63 feet / 63 feet

Solution / हल : Correct option: 63 feet | सही विकल्प: 63 feet

17. A metric space is compact if every open cover of x has ?

A metric space is compact if every open cover of x has ?

- (1) nonempty set / nonempty set
- (2) empty set / empty set
- (3) subgroup / subgroup
- (4) finite subcover / finite subcover

Correct Answer / सही उत्तर : (4) finite subcover / finite subcover

Solution / हल : Correct option: finite subcover | सही विकल्प: finite subcover

18. The sum of the first '2n' terms of the A.P. 2, 5, 8,... is equal to the sum of the first 'n' terms of the A.P. 57, 59, 61 ?

The sum of the first '2n' terms of the A.P. 2, 5, 8,... is equal to the sum of the first 'n' terms of the A.P. 57, 59, 61 ?

- (1) 10 / 1, 0
- (2) 12 / 12%
- (3) 13 / 13
- (4) 11 / 1, 1

Correct Answer / सही उत्तर : (4) 11 / 1, 1

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

19. Which of the following is not true?

Which of the following is not true?

- (1) $U(8)$ is isomorphic to $U(10)$ / $U(8)$ is isomorphic to $U(10)$
- (2) S^4 is not isomorphic to D_{12} / S^4 is not isomorphic to D_{12}
- (3) $U(8)$ is isomorphic to $U(12)$ / $U(8)$ is isomorphic to $U(12)$
- (4) $U(8)$ is not isomorphic to $U(10)$ / $U(8)$ is not isomorphic to $U(10)$

Correct Answer / सही उत्तर : (4) $U(8)$ is not isomorphic to $U(10)$ / $U(8)$ is not isomorphic to $U(10)$

Solution / हल : Correct option: $U(8)$ is not isomorphic to $U(10)$ | सही विकल्प: $U(8)$ is not isomorphic to $U(10)$

20. The value of x satisfying $150x = 35 \pmod{31}$ is ?

The value of x satisfying $150x = 35 \pmod{31}$ is ?

- (1) 22 / 22
- (2) 14 / 14%
- (3) 24 / 24
- (4) 12 / 12%

Correct Answer / सही उत्तर : (3) 24 / 24

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

21. If $L\{f(t)\} = F(s)$ then is $d+2 Ld^2(f(t))$?

If $L\{f(t)\} = F(s)$ then is $d+2 Ld^2(f(t))$?

- (1) $sF(s)$ / $sF(s)$
- (2) $s^2 f(0)$ / $s^2 f(0)$
- (3) $s^2 t'(s)$ / $s^2 t'(s)$

(4) $s^2 F(s) / s^2 F(s)$

Correct Answer / सही उत्तर : (4) $s^2 F(s) / s^2 F(s)$

Solution / हल : Correct option: $s^2 F(s)$ | सही विकल्प: $s^2 F(s)$

22. The median of the numbers 20, 18, 22, 27, 25, 12, 15 is ?

The median of the numbers 20, 18, 22, 27, 25, 12, 15 is ?

(1) 19.9 / 19.9

(2) 19.8 / 19.8

(3) 22 / 22

(4) 20 / 20

Correct Answer / सही उत्तर : (4) 20 / 20

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

23. The sum of the expression $1 + 1 + 1 + \dots + 1$ is $1 + 2 + 3 + 4 + \dots + 80 + 81$?

The sum of the expression $1 + 1 + 1 + \dots + 1$ is $1 + 2 + 3 + 4 + \dots + 80 + 81$?

(1) 7 / 7

(2) 9 / 9%

(3) 8 / 8

(4) 10 / 1, 0

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

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

24. The oscillation of a bounded function f on an interval $[a, b]$ is the _____ of the set $\{|f(x) - f(y)|\}$ of the numbers ?

The oscillation of a bounded function f on an interval $[a, b]$ is the _____ of the set $\{|f(x) - f(y)|\}$ of the numbers ?

(1) infimum / infimum

(2) supremum / supremum

(3) minimum / न्यूनतम

(4) maximum / अधिकतम

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

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

25. Find radius of convergence of $1 + x + x^2 + \dots$?

Find radius of convergence of $1 + x + x^2 + \dots$?

(1) 5 / 5

(2) 0 / 0

(3) Infinite / Infinite

(4) 10 / 1, 0

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

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

26. In a Mathematics test 15 students scored 80 marks, 20 students scored 75 marks, 28 students scored 65 marks and 25 students scored 60 marks, mode of the score is ?

In a Mathematics test 15 students scored 80 marks, 20 students scored 75 marks, 28 students scored 65 marks and 25 students scored 60 marks, mode of the score is ?

(1) 75 / 75

(2) 80 / 80

(3) 60 / 60

(4) 65 / 65

Correct Answer / सही उत्तर : (4) 65 / 65

Solution / हल : Correct option: 65 | सही विकल्प: 65

27. In a histogram, each class rectangle is constructed with base as ?
In a histogram, each class rectangle is constructed with base as ?

- (1) class interval / class interval
- (2) range / परास
- (3) frequency / frequency
- (4) size of the class / size of the class

Correct Answer / सही उत्तर : (1) class interval / class interval

Solution / हल : Correct option: class interval | सही विकल्प: class interval

28. Which one of the following is a solution of the differential equation 2 ?
Which one of the following is a solution of the differential equation 2 ?

- (1) y^2 / y^2
- (2) $y = x / y = x$
- (3) $y = x + 1 / y = x + 1$
- (4) $x^2 + 4y = 0 / x^2 + 4y = 0$

Correct Answer / सही उत्तर : (4) $x^2 + 4y = 0 / x^2 + 4y = 0$

Solution / हल : Correct option: $x^2 + 4y = 0$ | सही विकल्प: $x^2 + 4y = 0$

29. $C[a, b]$ i.e. the set of all continuous function from a to b is a subset of real valued ... function?
 $C[a, b]$ i.e. the set of all continuous function from a to b is a subset of real valued ... function?

- (1) bounded / bounded
- (2) discontinuous / असंतत
- (3) infinite / infinite
- (4) finite / finite

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

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

30. Given set $U = \{(x,y) > 7\}$ is ?
Given set $U = \{(x,y) > 7\}$ is ?

- (1) Open / ओपन
- (2) Close / Close
- (3) Semi open x / Semi open x
- (4) Compact / कॉम्पैक्ट

Correct Answer / सही उत्तर : (1) Open / ओपन

Solution / हल : Correct option: Open | सही विकल्प: ओपन

31. If A and B are real square matrices then which of the following is correct AT ?
If A and B are real square matrices then which of the following is correct AT ?

- (1) $A + AT$ is always skew-symmetric / $A + AT$ is always skew-symmetric
- (2) AB is always symmetric / AB is always symmetric
- (3) A / a
- (4) AB is not necessarily symmetric / AB is not necessarily symmetric

Correct Answer / सही उत्तर : (4) AB is not necessarily symmetric / AB is not necessarily symmetric

Solution / हल : Correct option: AB is not necessarily symmetric | सही विकल्प: AB is not necessarily symmetric

32. The last digit of is 6500 ?
The last digit of is 6500 ?

- (1) None of these / इनमें कोई नहीं
- (2) 2 / 2 : 1
- (3) 6 / 6
- (4) 4 / 4 : 1

Correct Answer / सही उत्तर : (3) 6 / 6

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

33. Find the number of integers between 1 and 250, that are divisible by any of the integer 2, 3 and 7 ?
Find the number of integers between 1 and 250, that are divisible by any of the integer 2, 3 and 7 ?

- (1) 182 / 182
- (2) 179 / 179
- (3) 170 / 170
- (4) 185 / 185

Correct Answer / सही उत्तर : (2) 179 / 179

Solution / हल : Correct option: 179 | सही विकल्प: 179

34. Which type of surface is circular cylinder?
Which type of surface is circular cylinder?

- (1) Topological surface / Topological surface
- (2) Algebraic and differential surface / Algebraic and differential surface
- (3) Implicit surface / Implicit surface
- (4) Fractal surface / Fractal surface

Correct Answer / सही उत्तर : (2) Algebraic and differential surface / Algebraic and differential surface

Solution / हल : Correct option: Algebraic and differential surface | सही विकल्प: Algebraic and differential surface

35. What powers of x does expansion of $\sin(x)$ contains?
What powers of x does expansion of $\sin(x)$ contains?

- (1) any alternate powers of x / any alternate powers of x
- (2) odd powers of x / odd powers of x
- (3) all powers of x / all powers of x
- (4) even powers of x / even powers of x

Correct Answer / सही उत्तर : (2) odd powers of x / odd powers of x

Solution / हल : Correct option: odd powers of x | सही विकल्प: odd powers of x

36. In metric space, if the function f is continuous, then ?
In metric space, if the function f is continuous, then ?

- (1) f is sequentially continuous / f is sequentially continuous
- (2) f is differentiable / f is differentiable
- (3) f is onto / f is onto
- (4) f is uniformly continuous / f is uniformly continuous

Correct Answer / सही उत्तर : (1) f is sequentially continuous / f is sequentially continuous

Solution / हल : Correct option: f is sequentially continuous | सही विकल्प: f is sequentially continuous

37. The half-life of radium is 1600 years, i.e. it 1600 years for half of any quantity to decay. If a sample initially contains 50 g, how long will it be until it contains 45 g ?

The half-life of radium is 1600 years, i.e. it 1600 years for half of any quantity to decay. If a sample initially contains 50 g, how long will it be until it contains 45 g ?

- (1) 282.4 years / 282.4 years
- (2) 344.3 years / 344.3 years
- (3) 243.2 years / 243.2 years
- (4) 212.3 years / 212.3 years

Correct Answer / सही उत्तर : (3) 243.2 years / 243.2 years

Solution / हल : Correct option: 243.2 years | सही विकल्प: 243.2 years

38. Using the Fundamental theorem, determine the x^2 value of the integral ?

Using the Fundamental theorem, determine the x^2 value of the integral ?

- (1) $3x \cos x^2 / 3x \cos x^2$
- (2) $x \cos x^2 / x \cos x^2$
- (3) $2x \cos x / 2x \cos x$
- (4) $2x \cos x^2 / 2x \cos x^2$

Correct Answer / सही उत्तर : (4) $2x \cos x^2 / 2x \cos x^2$

Solution / हल : Correct option: $2x \cos x^2$ | सही विकल्प: $2x \cos x^2$

39. What is the solution of this differential (d^2y) (dx^2) equation ?

What is the solution of this differential (d^2y) (dx^2) equation ?

- (1) $y(x) = a \cos(x) + b \sin x / y(x) = a \cos(x) + b \sin x$
- (2) $y(x) = \tan(x) / y(x) = \tan(x)$
- (3) $y(x) = a \sin(x) / y(x) = a \sin(x)$
- (4) $y(x) = \cot(x) / y(x) = \cot(x)$

Correct Answer / सही उत्तर : (1) $y(x) = a \cos(x) + b \sin x / y(x) = a \cos(x) + b \sin x$

Solution / हल : Correct option: $y(x) = a \cos(x) + b \sin x$ | सही विकल्प: $y(x) = a \cos(x) + b \sin x$

40. Is the derivability of a function possible?

Is the derivability of a function possible?

- (1) yes at $x=0$ / yes at $x=0$
- (2) yes at $x=1/x^2$ / yes at $x=1/x^2$
- (3) yes $0 < x < 1$ / yes $0 < x < 1$
- (4) no / NO

Correct Answer / सही उत्तर : (1) yes at $x=0$ / yes at $x=0$

Solution / हल : Correct option: yes at $x=0$ | सही विकल्प: yes at $x=0$

SECTION B - PHYSICS / खण्ड B - भौतिक विज्ञान

41. The correct value of 00°C on Kelvin scale is ?

The correct value of 00°C on Kelvin scale is ?

- (1) $273.16 \text{ K} / 273.16 \text{ K}$
- (2) $273 \text{ K} / 273 \text{ K}$
- (3) $273.15 \text{ K} / 273.15 \text{ K}$
- (4) $273.2 \text{ K} / 273.2 \text{ K}$

Correct Answer / सही उत्तर : (3) $273.15 \text{ K} / 273.15 \text{ K}$

Solution / हल : Correct option: 273.15 K | सही विकल्प: 273.15 K

42. The number of photons emitted per second by a 25 watt source of monochromatic light of wavelength 6000 is 10^{17} 10^{17} ?

The number of photons emitted per second by a 25 watt source of monochromatic light of wavelength 6000 is 10^{17} 10^{17} ?

- (1) $7.6 \times 10^{19} / 7.6 \times 10^{19}$
- (2) $6.1 \times 10^{19} / 6.1 \times 10^{19}$
- (3) $6.1 \times 10^{19} / 6.1 \times 10^{19}$
- (4) $7.6 \times 10^{19} / 7.6 \times 10^{19}$

Correct Answer / सही उत्तर : (4) $7.6 \times 10^{19} / 7.6 \times 10^{19}$

Solution / हल : Correct option: 7.6×10^{19} | सही विकल्प: 7.6×10^{19}

43. Vibrations of the diaphragm of a microphone are ?

Vibrations of the diaphragm of a microphone are ?

- (1) free oscillation / free oscillation
- (2) resonant oscillations / resonant oscillations
- (3) Damped oscillations / Damped oscillations

(4) forced oscillations / forced oscillations

Correct Answer / सही उत्तर : (4) forced oscillations / forced oscillations

Solution / हल : Correct option: forced oscillations | सही विकल्प: forced oscillations

44. Ratio of focal lengths of two lenses of Huygens eyepiece is ?

Ratio of focal lengths of two lenses of Huygens eyepiece is ?

(1) 2 / 2 : 1

(2) 1 / 1 : 1

(3) None of the above / इनमें कोई नहीं

(4) 3 / 3 : 1

Correct Answer / सही उत्तर : (4) 3 / 3 : 1

Solution / हल : Correct option: 3 | सही विकल्प: 3 : 1

45. The longest wavelength of the incident radiation which will eject from a metal whose workfunction = 6 eV will be: $6.624 \times 10^{34} \times 3 \times 10^8$ (given $h = Js \text{ c} = \text{m/sec}$) ?

The longest wavelength of the incident radiation which will eject from a metal whose workfunction = 6 eV will be: $6.624 \times 10^{34} \times 3 \times 10^8$ (given $h = Js \text{ c} = \text{m/sec}$) ?

(1) 2500 / 2500

(2) 3145 / 3145

(3) 2071 / 2071

(4) 1895 / 1895

Correct Answer / सही उत्तर : (3) 2071 / 2071

Solution / हल : Correct option: 2071 | सही विकल्प: 2071

46. A force $F=4i+5j+6k$ is applied on a body and it is displaced by $x=3i+7j+8k$. How much work is done?

A force $F=4i+5j+6k$ is applied on a body and it is displaced by $x=3i+7j+8k$. How much work is done?

(1) 48 / 48

(2) 60 / 60

(3) 95 / 95

(4) 120 / 120

Correct Answer / सही उत्तर : (3) 95 / 95

Solution / हल : Correct option: 95 | सही विकल्प: 95

47. The frequency of oscillation of a diatomic molecule in terms of force constant K and reduced mass μ , is given by ?

The frequency of oscillation of a diatomic molecule in terms of force constant K and reduced mass μ , is given by ?

(1) $2\pi K/\pi 1$ / $2\pi K/\pi 1$

(2) $K/\mu 2\pi 2\pi T^2$ / $K/\mu 2\pi 2\pi T^2$

(3) $2\pi \pi/K$ / $2\pi \pi/K$

(4) μ/K / μ/K

Correct Answer / सही उत्तर : (2) $K/\mu 2\pi 2\pi T^2$ / $K/\mu 2\pi 2\pi T^2$

Solution / हल : Correct option: $K/\mu 2\pi 2\pi T^2$ | सही विकल्प: $K/\mu 2\pi 2\pi T^2$

48. Which of the following is the unit of strain?

Which of the following is the unit of strain?

(1) No unit / No unit

(2) Watt / Watt

(3) Newton / Newton

(4) Joule / Joule

Correct Answer / सही उत्तर : (1) No unit / No unit

Solution / हल : Correct option: No unit | सही विकल्प: No unit

49. The mean separation of two points on moon that can be resolved by a 500 cm telescope aperture is (distance of the moon is 4×10^5 km, eye is most sensitive to wavelength 5500) ?

The mean separation of two points on moon that can be resolved by a 500 cm telescope aperture is (distance of the moon is 4×10^5 km, eye is most sensitive to wavelength 5500) ?

- (1) 43 m / 43 m
- (2) 50.6 m / 50.6 m
- (3) 53.6 m / 53.6 m
- (4) 40 m / 40 m

Correct Answer / सही उत्तर : (3) 53.6 m / 53.6 m

Solution / हल : Correct option: 53.6 m | सही विकल्प: 53.6 m

50. A car is travelling at speed 30m/s on a circular road of radius 500 m. It is increasing in speed 2ms^{-2} . at the rate of The acceleration of car is ?

A car is travelling at speed 30m/s on a circular road of radius 500 m. It is increasing in speed 2ms^{-2} . at the rate of The acceleration of car is ?

- (1) 3.6 m/s^2 / 3.6 m/s^2
- (2) 2.7 m/s^2 / 2.7 m/s^2
- (3) 1.8 m/s^2 / 1.8 m/s^2
- (4) 2 m/s^2 / 2 m/s^2

Correct Answer / सही उत्तर : (2) 2.7 m/s^2 / 2.7 m/s^2

Solution / हल : Correct option: 2.7 m/s^2 | सही विकल्प: 2.7 m/s^2

51. Planck's constant has the same unit as ?

Planck's constant has the same unit as ?

- (1) force \times time / force \times time
- (2) force \times distance / force \times distance
- (3) force \times speed / force \times speed
- (4) force \times distance \times time / force \times distance \times time

Correct Answer / सही उत्तर : (4) force \times distance \times time / force \times distance \times time

Solution / हल : Correct option: force \times distance \times time | सही विकल्प: force \times distance \times time

52. A swimmer who can swim in still water at wants speed to cross a river flowing at a speed u . In what direction should he swim to cross the river in least time?

A swimmer who can swim in still water at wants speed to cross a river flowing at a speed u . In what direction should he swim to cross the river in least time?

- (1) Along $\sin^{-1} \frac{u}{v}$ / Along $\sin^{-1} \frac{u}{v}$
- (2) Parallel to the flow $\sin^{-1} \frac{u}{v}$ / Parallel to the flow $\sin^{-1} \frac{u}{v}$
- (3) Perpendicular to the flow / Perpendicular to the flow
- (4) Along / Along

Correct Answer / सही उत्तर : (3) Perpendicular to the flow / Perpendicular to the flow

Solution / हल : Correct option: Perpendicular to the flow | सही विकल्प: Perpendicular to the flow

53. The energy radiated by Black body is proportional to ?

The energy radiated by Black body is proportional to ?

- (1) T^4 / T^4
- (2) T / T
- (3) T^2 / T^2
- (4) T^3 / T^3

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

Solution / हल : Correct option: T^4 | सही विकल्प: T^4

54. The sign of charge carriers can be determined by utilizing ?

The sign of charge carriers can be determined by utilizing ?

- (1) Piezoelectric effect / Piezoelectric effect
- (2) Mossbauer effect / Mossbauer effect
- (3) Meissner effect / Meissner effect
- (4) Hall effect / Hall effect

Correct Answer / सही उत्तर : (4) Hall effect / Hall effect

Solution / हल : Correct option: Hall effect | सही विकल्प: Hall effect

55. A boat which has speed of 5km/hr in still water crosses a river of width 1 km along the shortest possible path in 15 minutes. The velocity of water of the river in km/hr is ?

A boat which has speed of 5km/hr in still water crosses a river of width 1 km along the shortest possible path in 15 minutes. The velocity of water of the river in km/hr is ?

- (1) 3 / 3 : 1
- (2) 2 / 2 : 1
- (3) 14 / 14%
- (4) 4 / 4 : 1

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

Solution / हल : Correct option: 3 | सही विकल्प: 3 : 1

56. The energy required to accelerate a particle of rest mass m to $0.6c$ from rest will be : $0.36 mc^2$?

The energy required to accelerate a particle of rest mass m to $0.6c$ from rest will be : $0.36 mc^2$?

- (1) $0.36 mc^2$ / $0.36 mc^2$
- (2) $0.25 mc^2$ / $0.25 mc^2$
- (3) $0.4 mc^2$ / $0.4 mc^2$
- (4) $0.18 mc^2$ / $0.18 mc^2$

Correct Answer / सही उत्तर : (2) $0.25 mc^2$ / $0.25 mc^2$

Solution / हल : Correct option: $0.25 mc^2$ | सही विकल्प: $0.25 mc^2$

57. For which of the following pair of resistors, the balancing length is not 0.25 m in a meter bridge?

For which of the following pair of resistors, the balancing length is not 0.25 m in a meter bridge?

- (1) 2, 3 / 2.3%
- (2) $7/3, 7$ / $7/3, 7$
- (3) 1, 3 / 13
- (4) 25, 75 / 25, 75

Correct Answer / सही उत्तर : (1) 2, 3 / 2.3%

Solution / हल : Correct option: 2, 3 | सही विकल्प: 2.3%

58. A metal in which even Iron can float is ?

A metal in which even Iron can float is ?

- (1) magnesium / मैग्नीशियम
- (2) manganese / मंगनीस
- (3) sodium / सोडियम
- (4) mercury / मरकुरी

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

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

59. Planck's radiation law reduces to Wien's law for ?

Planck's radiation law reduces to Wien's law for ?

- (1) Higher temperature / Higher temperature
- (2) Lower λ / Lower λ
- (3) Lower temperature / Lower temperature
- (4) Higher λ / Higher λ

Correct Answer / सही उत्तर : (2) Lower λ / Lower λ

Solution / हल : Correct option: Lower λ | सही विकल्प: Lower λ

60. The ratio of mass of a planet to that of the earth, if its radius is half that of the earth and acceleration due to gravity on its surface is twice that on earth's surface, is ?

The ratio of mass of a planet to that of the earth, if its radius is half that of the earth and acceleration due to gravity on its surface is twice that on earth's surface, is ?

(1) 0.25 / 0.25

(2) 0.33 / 0.33

(3) 2 / 2 : 1

(4) 0.5 / 0.5

Correct Answer / सही उत्तर : (4) 0.5 / 0.5

Solution / हल : Correct option: 0.5 | सही विकल्प: 0.5

SECTION C - CHEMISTRY / खण्ड C - रसायन विज्ञान

61. Spodumene is the mineral of which element?

Spodumene is the mineral of which element?

(1) Caesium / Caesium

(2) Lithium / लिथियम

(3) Potassium / पोटैशियम

(4) Sodium / सोडियम

Correct Answer / सही उत्तर : (2) Lithium / लिथियम

Solution / हल : Correct option: Lithium | सही विकल्प: लिथियम

62. There is desorption of physical adsorption when: Yeewefleke ?

भौतिक अधिशोषण का विशोषण कब होता है ?

(1) Concentration increases / सांद्रता बढ़ने पर

(2) Pressure increases / दाब बढ़ने पर

(3) Temperature increases / ताप बढ़ने पर

(4) Temperature decreases / ताप घटने पर

Correct Answer / सही उत्तर : (3) Temperature increases / ताप बढ़ने पर

Solution / हल : Physical adsorption desorbs when temperature increases. | ताप बढ़ने पर भौतिक अधिशोषण विशोषित होता है।

63. Cake is an example ?

केक किसका उदाहरण है ?

(1) Solid in liquid / द्रव में ठोस

(2) Liquid in solid / ठोस में द्रव

(3) Gas in solid / ठोस में गैस

(4) Solid in solid / ठोस में ठोस

Correct Answer / सही उत्तर : (3) Gas in solid / ठोस में गैस

Solution / हल : A cake is an example of gas dispersed in a solid. | केक ठोस में परिक्षेपित गैस का उदाहरण है।

64. Primary and Secondary amines form ____ ?

प्राथमिक व द्वितीयक ऐमीन क्रमशः क्या बनाते हैं ?

(1) imines and enamines; ketones and aldehydes / इमीन व एनामीन; कीटोन व एल्डिहाइड

(2) enamines and enamines; aldehydes and ketones / एनामीन व एनामीन; एल्डिहाइड व कीटोन

(3) imines and enamines; aldehydes and ketones / इमीन व एनामीन; एल्डिहाइड व कीटोन

(4) enamines and imines; aldehydes and ketones / एनामीन व इमीन; एल्डिहाइड व कीटोन

Correct Answer / सही उत्तर : (3) imines and enamines; aldehydes and ketones / इमीन व एनामीन; एल्डिहाइड व कीटोन

Solution / हल : Primary and secondary amines form imines and enamines respectively. | प्राथमिक व द्वितीयक ऐमीन क्रमशः इमीन व एनामीन बनाते हैं।

65. The transition state of SN reaction has: 2 SN ?

The transition state of SN reaction has: 2 SN ?

- (1) Carbon tetrahedral structure / कार्बन चतुष्फलकीय संरचना
- (2) Linear structure / रैखिक संरचना
- (3) Square planar structure / वर्ग समतलीय संरचना
- (4) Normal tetrahedral structure / सामान्य चतुष्फलकीय संरचना

Correct Answer / सही उत्तर : (1) Carbon tetrahedral structure / कार्बन चतुष्फलकीय संरचना

Solution / हल : Correct option: Carbon tetrahedral structure | सही विकल्प: कार्बन चतुष्फलकीय संरचना

66. How many times Al³⁺ ion is more effective than Na⁺ ion in flocculating a negatively charged sol?

ऋणावेशित सॉल के स्कंदन में Al³⁺ आयन Na⁺ से कितने गुना अधिक प्रभावी है ?

- (1) Six times / छह गुना
- (2) Nine times / नौ गुना
- (3) Two times / दो गुना
- (4) Three times / तीन गुना

Correct Answer / सही उत्तर : (2) Nine times / नौ गुना

Solution / हल : Al³⁺ is nine times more effective than Na⁺ (Hardy-Schulze). | Al³⁺ Na⁺ से नौ गुना अधिक प्रभावी है (हार्डी-शुल्जे)।

67. while, Mn exhibits highest range of oxidation states from + 2 to +7. 150. Mn-Cu alloys indicate _____ ?

while, Mn exhibits highest range of oxidation states from + 2 to +7. 150. Mn-Cu alloys indicate _____ ?

- (1) ferromagnetic / लौहचुंबकीय
- (2) antiferromagnetic / प्रतिलौहचुंबकीय
- (3) diamagnetic / प्रतिचुंबकीय
- (4) paramagnetic / अनुचुंबकीय

Correct Answer / सही उत्तर : (1) ferromagnetic / लौहचुंबकीय

Solution / हल : Correct option: ferromagnetic | सही विकल्प: लौहचुंबकीय

68. A conjugated enone exhibits an ultraviolet absorption maximum at 245nm ?

एक संयुग्मित इनोन 245 nm पर UV अवशोषण अधिकतम दर्शाता है — (परिवर्तन) ?

- (1) shift to longer wavelength / लंबी तरंगदैर्घ्य की ओर
- (2) remain unaffected / अप्रभावित रहता
- (3) disappear / लुप्त हो जाता
- (4) move to shorter wavelength / छोटी तरंगदैर्घ्य की ओर

Correct Answer / सही उत्तर : (1) shift to longer wavelength / लंबी तरंगदैर्घ्य की ओर

Solution / हल : A conjugated enone's UV max shifts to longer wavelength (conjugation). | संयुग्मित इनोन का UV अधिकतम लंबी तरंगदैर्घ्य की ओर खिसकता है।

69. Which one of the following has T-shape?

निम्नलिखित में किसकी आकृति T-आकार है ?

- (1) NF₃ / NF₃
- (2) PF₃ / PF₃
- (3) BF₃ / BF₃
- (4) ClF₃ / ClF₃

Correct Answer / सही उत्तर : (4) ClF₃ / ClF₃

Solution / हल : ClF₃ has a T-shape. | ClF₃ की आकृति T-आकार है।

70. The polymerization of 1, 3-butadiene to give poly (butadiene) elastomer is an example ?

1,3-ब्यूटाडाईन का पॉली(ब्यूटाडाईन) इलास्टोमर में बहुलकन किसका उदाहरण है ?

- (1) trans-1, 2-addition / ट्रांस-1,2-योग
- (2) cis-1, 4-addition / सिस-1,4-योग
- (3) trans-1, 4-addition / ट्रांस-1,4-योग
- (4) 1, 2 addition / 1,2-योग

Correct Answer / सही उत्तर : (2) cis-1, 4-addition / सिस-1,4-योग

Solution / हल : Polymerisation of 1,3-butadiene is a cis-1,4-addition. | 1,3-ब्यूटाडाईन का बहुलकन सिस-1,4-योग है।

71. According to the Debye-Huckel limiting law, if the concentration of a dilute aqueous solution of KCl is increased 9 folds, the value of γ_{\pm} (molar mean ionic activity coefficient) is _____ ?

डिबाई-हकल सीमांत नियम अनुसार KCl की सांद्रता 9 गुना बढ़ने पर माध्य आयनिक सक्रियता गुणांक का मान क्या होगा ?

- (1) Decrease by 9 fold / 9 गुना घटेगा
- (2) Increase by 3 fold / 3 गुना बढ़ेगा
- (3) Increase by 9 fold / 9 गुना बढ़ेगा
- (4) Decrease by 3 fold / 3 गुना घटेगा

Correct Answer / सही उत्तर : (4) Decrease by 3 fold / 3 गुना घटेगा

Solution / हल : By Debye-Huckel, 9-fold concentration \Rightarrow activity coeff decreases \sim 3-fold. | डिबाई-हकल अनुसार 9 गुना सांद्रता \Rightarrow सक्रियता गुणांक \sim 3 गुना घटेगा।

72. The pH of Acid rain is: Decueer ?

अम्ल वर्षा का pH कितना होता है ?

- (1) Between 8-9 / Between 8-9
- (2) Below 3.5 / 3.5 से नीचे
- (3) Below 4.5 / 4.5 से नीचे
- (4) Below 5.6 / 5.6 से नीचे

Correct Answer / सही उत्तर : (4) Below 5.6 / 5.6 से नीचे

Solution / हल : The pH of acid rain is below 5.6. | अम्ल वर्षा का pH 5.6 से नीचे होता है।

73. Example of homogenous catalysts used in homogenous hydrogenation is _____ ?

समांगी हाइड्रोजनीकरण में प्रयुक्त समांगी उत्प्रेरक का उदाहरण कौन-सा है ?

- (1) Finely dispersed Platinum / सूक्ष्म विभाजित प्लैटिनम
- (2) Complexes of Rhodium / रोडियम के संकुल
- (3) Finely dispersed Rhodium / सूक्ष्म विभाजित रोडियम
- (4) Pt / Pt

Correct Answer / सही उत्तर : (2) Complexes of Rhodium / रोडियम के संकुल

Solution / हल : Complexes of rhodium are homogeneous hydrogenation catalysts. | रोडियम के संकुल समांगी हाइड्रोजनीकरण उत्प्रेरक हैं।

74. Compounds that inhibit the action of compounds ?

किसी यौगिक की क्रिया को रोकने वाले यौगिक क्या कहलाते हैं ?

- (1) Narcotic drug / स्वापक औषधि
- (2) Antipyretics / ज्वररोधी
- (3) Antihistamines / प्रतिहिस्टामिन
- (4) Analgesics / पीड़ाहारी

Correct Answer / सही उत्तर : (3) Antihistamines / प्रतिहिस्टामिन

Solution / हल : Antihistamines inhibit the action of histamine. | प्रतिहिस्टामिन हिस्टामिन की क्रिया रोकते हैं।

75. Cholesterol lowering drugs are known as _____ ?

कोलेस्ट्रॉल घटाने वाली औषधियाँ क्या कहलाती हैं ?

- (1) Anthraquinones / एन्थ्राक्विनोन
- (2) Alkaloids / एल्केलॉइड
- (3) Statins / स्टैटिन
- (4) Quinones / क्विनोन

Correct Answer / सही उत्तर : (3) Statins / स्टैटिन

Solution / हल : Cholesterol-lowering drugs are statins. | कोलेस्ट्रॉल घटाने वाली औषधियाँ स्टैटिन हैं।

76. An organometallic complex that is used as an anticancer drug that targets DNA to inhibit cell growth is called _____ ?

वह कार्बधात्विक संकुल जो कैंसर-रोधी औषधि के रूप में DNA को लक्षित कर कोशिका वृद्धि रोकता है ?

- (1) Ferroquine / फेरोक्विन
- (2) cis-Platin / सिस-प्लैटिन
- (3) Salvarsan / साल्वार्सन
- (4) Chloroquine / क्लोरोक्विन

Correct Answer / सही उत्तर : (2) cis-Platin / सिस-प्लैटिन

Solution / हल : cis-Platin is the organometallic anticancer drug targeting DNA. | सिस-प्लैटिन DNA को लक्षित करने वाली कैंसर-रोधी कार्बधात्विक औषधि है।

77. In Parke's process of silver extraction, the metal zinc acts ?

सिल्वर निष्कर्षण की पार्क प्रक्रिया में जिंक किस रूप में कार्य करता है ?

- (1) oxidizing agent / ऑक्सीकारक
- (2) complexing agent / संकुलनकारी
- (3) solvent for extraction / निष्कर्षण विलायक
- (4) reducing agent / अपचायक (reducing agent)

Correct Answer / सही उत्तर : (4) reducing agent / अपचायक (reducing agent)

Solution / हल : In Parke's process, zinc acts as a reducing/extracting agent. | पार्क प्रक्रिया में जिंक अपचायक/निष्कर्षक रूप में कार्य करता है।

78. An electron near the nucleus is strongly attracted by the nucleus and has _____ ?

नाभिक के निकट इलेक्ट्रॉन प्रबलता से आकर्षित होता है और उसकी _____ होती है ?

- (1) Low kinetic energy / निम्न गतिज ऊर्जा
- (2) Low potential energy / निम्न स्थितिज ऊर्जा
- (3) High kinetic energy / उच्च गतिज ऊर्जा
- (4) High potential energy / उच्च स्थितिज ऊर्जा

Correct Answer / सही उत्तर : (2) Low potential energy / निम्न स्थितिज ऊर्जा

Solution / हल : An electron near the nucleus has low potential energy. | नाभिक के निकट इलेक्ट्रॉन की स्थितिज ऊर्जा निम्न होती है।

79. The metal obtained from the auto reduction of its oxide with sulfide is : Gme Oeeleg ?

सल्फाइड के साथ अपने ऑक्साइड के स्वतः अपचयन से प्राप्त धातु कौन-सी है ?

- (1) Al / AlCl₃
- (2) Cu / Cu
- (3) Zn / Zn
- (4) Fe / Fe

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

Solution / हल : Copper is obtained by auto-reduction of its oxide with sulphide. | कॉपर अपने ऑक्साइड के सल्फाइड से स्वतः अपचयन से प्राप्त होता है।

80. Pale blue coloured [Cu(H₂O)₆]²⁺ ion reacts with 2 6 aqueous ammonia solution, to form which coloured ion?

हल्का नीला [Cu(H₂O)₆]²⁺ आयन जलीय अमोनिया से अभिक्रिया कर कौन-सा रंगीन आयन बनाता है ?

- (1) Green coloured ion / हरा रंगीन आयन
- (2) Pale blue coloured ion / हल्का नीला रंगीन आयन
- (3) Deep blue coloured ion / गहरा नीला रंगीन आयन
- (4) Colourless / रंगहीन

Correct Answer / सही उत्तर : (3) Deep blue coloured ion / गहरा नीला रंगीन आयन

Solution / हल : $[\text{Cu}(\text{H}_2\text{O})_6]^{2+}$ with ammonia forms a deep blue ion $[\text{Cu}(\text{NH}_3)_4]^{2+}$. | $[\text{Cu}(\text{H}_2\text{O})_6]^{2+}$ अमोनिया से गहरा नीला $[\text{Cu}(\text{NH}_3)_4]^{2+}$ बनाता है।

81. Which of the following materials contains the highest percent of iron?

निम्नलिखित में किसमें लोहे का प्रतिशत सर्वाधिक है ?

- (1) Pig iron / पिग आयरन
- (2) Steel / स्टील
- (3) Cast iron / कास्ट आयरन
- (4) Wrought iron / रॉट आयरन

Correct Answer / सही उत्तर : (4) Wrought iron / रॉट आयरन

Solution / हल : Wrought iron has the highest percent of iron. | रॉट आयरन में लोहे का प्रतिशत सर्वाधिक है।

82. The common name of pentanoic acid is: heW ?

पेंटानोइक अम्ल का सामान्य नाम क्या है ?

- (1) Lauric acid / लॉरिक अम्ल
- (2) Valeric acid / वैलेरिक अम्ल
- (3) Pivalic acid / पिवैलिक अम्ल
- (4) Stearic acid / स्टीयरिक अम्ल

Correct Answer / सही उत्तर : (2) Valeric acid / वैलेरिक अम्ल

Solution / हल : The common name of pentanoic acid is valeric acid. | पेंटानोइक अम्ल का सामान्य नाम वैलेरिक अम्ल है।

83. End products obtained during ozonolysis of 1, 3-butadiene are 1, 3-y ?

1,3-ब्यूटाडाइन के ओज़ोनोलिसिस से प्राप्त अंतिम उत्पाद क्या हैं ?

- (1) formaldehyde and glycolic acid / फॉर्मैल्डिहाइड व ग्लाइकोलिक अम्ल
- (2) formaldehyde and glycol / फॉर्मैल्डिहाइड व ग्लाइकॉल
- (3) formic acid and glycolic acid / फॉर्मिक अम्ल व ग्लाइकोलिक अम्ल
- (4) oxalic acid and formaldehyde / ऑक्सैलिक अम्ल व फॉर्मैल्डिहाइड

Correct Answer / सही उत्तर : (2) formaldehyde and glycol / फॉर्मैल्डिहाइड व ग्लाइकॉल

Solution / हल : Ozonolysis of 1,3-butadiene gives formaldehyde and glyoxal/glycol. | 1,3-ब्यूटाडाइन का ओज़ोनोलिसिस फॉर्मैल्डिहाइड व ग्लाइऑक्सल देता है।

84. On electrolysis of aqueous potassium maleate, the gas collected at anode is peueer ?

जलीय पोटैशियम मैलिक्ट के विद्युत-अपघटन पर एनोड पर एकत्र गैस कौन-सी है ?

- (1) ethane / एथेन
- (2) ethyne / एथाइन
- (3) a mixture of ethane and ethene / एथेन व एथीन का मिश्रण
- (4) ethene / एथीन

Correct Answer / सही उत्तर : (2) ethyne / एथाइन

Solution / हल : Electrolysis of potassium maleate gives ethyne at the anode (Kolbe). | पोटैशियम मैलिक्ट के विद्युत-अपघटन पर एनोड पर एथाइन मिलती है।

85. Dipole moment is maximum in: [eFheesue ?

Dipole moment is maximum in: [eFheesue ?

- (1) HF / HF
- (2) HBr / HBr

(3) HCI / HCI

(4) HI / HI

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

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

SECTION D - COMPUTER / खण्ड D - कंप्यूटर

86. Which of the following software collects information from a computer and transmits it to Man-in-the-middle?

कौन-सा सॉफ्टवेयर कंप्यूटर से जानकारी एकत्र कर बिचौलिये को भेजता है ?

(1) Memory Resident / मेमोरी रेज़िडेंट

(2) Boot Sector Virus / बूट सेक्टर वायरस

(3) Spyware / स्पाईवेयर

(4) Fork Bomb / फोर्क बॉम्ब

Correct Answer / सही उत्तर : (3) Spyware / स्पाईवेयर

Solution / हल : Spyware collects and transmits information to a third party. | स्पाईवेयर जानकारी एकत्र कर तीसरे पक्ष को भेजता है।

87. Computer Display is also called keb ?

Computer Display is also called keb ?

(1) Multimedia Monitor Terminals / Multimedia Monitor Terminals

(2) Video Distribution Units / Video Distribution Units

(3) Video Display Terminal / Video Display Terminal

(4) Cathode Ray Tube / Cathode Ray Tube

Correct Answer / सही उत्तर : (3) Video Display Terminal / Video Display Terminal

Solution / हल : Correct option: Video Display Terminal | सही विकल्प: Video Display Terminal

88. Unix, MS DOS, Linux are examples of ?

Unix, MS DOS, Linux are examples of ?

(1) Systems / Systems

(2) Printers / Printers

(3) Brands of printers / Brands of printers

(4) Operating / Operating

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

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

89. Which of the following input devices is an devices?

Which of the following input devices is an devices?

(1) Monitor / मॉनिटर

(2) Modem / मोडेम

(3) Keyboard / कीबोर्ड

(4) Mouse / माउस

Correct Answer / सही उत्तर : (4) Mouse / माउस

Solution / हल : Correct option: Mouse | सही विकल्प: माउस

90. Instructions to computer are given through ?

Instructions to computer are given through ?

(1) Input unit / Input unit

(2) Pen / Pen

(3) ALU / ALU

(4) drive / ड्राइव

Correct Answer / सही उत्तर : (1) Input unit / Input unit

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

91. Which of the following provides the slot to connect graphics cards?
निम्नलिखित में कौन ग्राफिक्स कार्ड जोड़ने का स्लॉट देता है ?

- (1) PCI slot / PCI स्लॉट
- (2) AGP slot / AGP स्लॉट
- (3) USB port / USB पोर्ट
- (4) RAM slot / RAM स्लॉट

Correct Answer / सही उत्तर : (2) AGP slot / AGP स्लॉट

Solution / हल : The AGP slot connects graphics cards. | AGP स्लॉट ग्राफिक्स कार्ड जोड़ता है।

92. Which of the following is a real time operating system?

निम्नलिखित में कौन रियल-टाइम ऑपरेटिंग सिस्टम है ?

- (1) DNX / DNX
- (2) MS-Windows / MS-Windows
- (3) Linux / Linux
- (4) Unix / Unix

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

Solution / हल : DNX (QNX-type) is a real-time operating system. | DNX (QNX-प्रकार) रियल-टाइम ऑपरेटिंग सिस्टम है।

93. was the first computer language developed for electronic computer in 1949?

1949 में इलेक्ट्रॉनिक कंप्यूटर हेतु विकसित पहली कंप्यूटर भाषा कौन-सी थी ?

- (1) Short Code / शॉर्ट कोड
- (2) Pascal / PASCAL
- (3) COBOL / COBOL
- (4) FORTRAN / FORTRAN

Correct Answer / सही उत्तर : (1) Short Code / शॉर्ट कोड

Solution / हल : Short Code was the first computer language (1949). | शॉर्ट कोड पहली कंप्यूटर भाषा (1949) थी।

94. Which of the following is not true about Cache memory?

कैश मेमोरी के बारे में कौन-सा सत्य नहीं है ?

- (1) Faster memory than RAM / RAM से तेज़
- (2) Smaller in size than RAM / RAM से छोटी
- (3) Sequential access memory / अनुक्रमिक अभिगम मेमोरी
- (4) Volatile memory / वाष्पशील मेमोरी

Correct Answer / सही उत्तर : (3) Sequential access memory / अनुक्रमिक अभिगम मेमोरी

Solution / हल : Cache is not sequential-access memory (it is random access). | कैश अनुक्रमिक-अभिगम मेमोरी नहीं है (यह रैंडम अभिगम है)।

95. _____ key is pressed to compile a program in C language ?

_____ key is pressed to compile a program in C language ?

- (1) Alt + C / Alt + C
- (2) Alt + F5 / Alt + F5
- (3) Alt + F / Alt + F
- (4) Alt + F9 / Alt + F9

Correct Answer / सही उत्तर : (4) Alt + F9 / Alt + F9

Solution / हल : Correct option: Alt + F9 | सही विकल्प: Alt + F9

SECTION E - MENTAL ABILITY / खण्ड E - मानसिक योग्यता

96. What should come in place of the question mark so that it satisfies inequality of the equation ? $32\% \text{ of } 750 < ?$

What should come in place of the question mark so that it satisfies inequality of the equation ? $32\% \text{ of } 750 < ?$

- (1) 98% of 250 / 98% of 250
- (2) 75% of 320 / 75% of 320
- (3) 23% of 600 / 23% of 600
- (4) 46% of 207 / 46% of 207

Correct Answer / सही उत्तर : (1) 98% of 250 / 98% of 250

Solution / हल : Correct option: 98% of 250 | सही विकल्प: 98% of 250

97. Meera purchased 23 bracelets at the rate of Rs.160 per bracelet. At what rate per bracelet should she sell the bracelets so that profit earned is 15% ?

Meera purchased 23 bracelets at the rate of Rs.160 per bracelet. At what rate per bracelet should she sell the bracelets so that profit earned is 15% ?

- (1) Rs. 192/ / Rs. 192/
- (2) Rs. 198/ / Rs. 198/
- (3) Rs. 184/ / Rs. 184/
- (4) Rs. 186/ / Rs. 186/

Correct Answer / सही उत्तर : (3) Rs. 184/ / Rs. 184/

Solution / हल : Correct option: Rs. 184/ | सही विकल्प: Rs. 184/

98. What is the difference between the compound interest and simple interest accrued on an amount of Rs.16,200 at the end of three years at the rate of 25%? (Rounded off to two digits after decimal.)

What is the difference between the compound interest and simple interest accrued on an amount of Rs.16,200 at the end of three years at the rate of 25%? (Rounded off to two digits after decimal.)

- (1) Rs. 3290.63 / Rs. 3290.63
- (2) Rs. 3213.44 / Rs. 3213.44
- (3) Rs. 3495.28 / Rs. 3495.28
- (4) Rs. 3302.42 / Rs. 3302.42

Correct Answer / सही उत्तर : (1) Rs. 3290.63 / Rs. 3290.63

Solution / हल : Correct option: Rs. 3290.63 | सही विकल्प: Rs. 3290.63

99. Amit and Sujit together can complete an assignment of data entry in five days. Sujits speed is 80% of Amits speed and the total key depressions in the assignment are 5,76,000. What is Amits speed in key depressions per hour if they work for 8 hours a day?

अमित व सुजीत मिलकर डेटा एंट्री का काम 5 दिन में पूरा करते हैं — (कुल इकाई) ?

- (1) 8000 / 8000
- (2) 7200 / 7200
- (3) 6400 / 6400
- (4) 4800 / 4800

Correct Answer / सही उत्तर : (1) 8000 / 8000

Solution / हल : Total work = 8000 units (per the key). | कुल कार्य = 8000 इकाई (कुंजी अनुसार)।

100. What will be the difference between simple interest and compound interest at 4% per annum on a sum of Rs.5000 after 3 yr?

What will be the difference between simple interest and compound interest at 4% per annum on a sum of Rs.5000 after 3 yr?

- (1) Rs. 24.32 / Rs. 24.32
- (2) Rs. 32.48 / Rs. 32.48
- (3) Rs. 28.56 / Rs. 28.56
- (4) Rs. 36.18 / Rs. 36.18

Correct Answer / सही उत्तर : (1) Rs. 24.32 / Rs. 24.32

Solution / हल : Correct option: Rs. 24.32 | सही विकल्प: Rs. 24.32

