

# BScMathematics-Set2

Topic:- B.Sc\_Mathematics\_Set2

1) The differential equation that can be formed by eliminating the arbitrary constant  $m$  from  $y = mx + \frac{\alpha}{m}$  is

[Question ID = 23660]

1.  $y = x + \alpha$

2.  $y = xy' + \frac{\alpha}{y'}$

3.  $y = \alpha y'$

4.  $y' = xy + \frac{\alpha}{x}$

Correct Answer :-

•  $y = xy' + \frac{\alpha}{y'}$

2) The integrating factor of the linear differential equation  $(1 + y^2) \frac{dx}{dy} + x = e^{\tan^{-1}y}$  is

[Question ID = 23661]

1.  $x$

2.  $y$

3.  $e^{\tan^{-1}x}$

4.  $e^{\tan^{-1}y}$

Correct Answer :-

•  $e^{\tan^{-1}y}$

3) The solution of the differential equation

$$\frac{dy}{dx} = \frac{4x-8y+4}{x-2y+1} \text{ is}$$

[Question ID = 23662]

1.  $y = 4x + c$
2.  $y = x + c$
3.  $y + 4x = c$
4.  $y = \log x + c$

**Correct Answer :-**

- $y = 4x + c$

4) The solution of the differential equation

$$\frac{2x dx + 2y dy}{x^2 + y^2} + \tan x dx = 0 \text{ is}$$

[Question ID = 23663]

1.  $x^2 + y^2 + \sec^2 x = c$
2.  $(x^2 + y^2)\sec x = c$
3.  $x^2 y^2 + \sec x = c$
4.  $x^2 + y^2 \sec^2 x = c$

**Correct Answer :-**

- $(x^2 + y^2)\sec x = c$

5) The solution of the differential equation

$$(1+x^2)\frac{dy}{dx} + 2xy = \cot x \text{ is}$$

[Question ID = 23664]

1.  $(1+x^2)y = \log \sin x + c$
2.  $(1+x^2)y = \log \sec x + c$
3.  $(1+x^2)y + \log \sec x = c$
4.  $(1+x^2)y = \log \tan x + c$

**Correct Answer :-**

- $(1+x^2)y = \log \sin x + c$

6) The solution of the equation  $x dy - y dx = xy^2 dx$  is

**[Question ID = 23665]**

1.  $x^2 + 2x = c$

2.  $\frac{x^2}{2} + \frac{x}{y} = c$

3.  $\frac{x^2}{2} - \frac{x}{y} = c$

4.  $\frac{x^2}{2} + xy = c$

**Correct Answer :-**

- $\frac{x^2}{2} + \frac{x}{y} = c$

7) The differential equation  $\frac{dy}{dx} = \frac{1}{ax+by+c}$  ( $a, b, c \in \mathbb{R} - \{0\}$ ) is

**[Question ID = 23666]**

1. linear in y
2. exact equation
3. non linear in both x and y
4. linear in x

**Correct Answer :-**

- linear in x

8) which of the following equations is an exact differential equation [Question ID = 23667]

1.  $x^2 dx + (2y + x) dy = 0$

2.  $2xy dx + (2 + x^2) dy = 0$

3.  $x^2 dy + y dx = 0$

4.  $x^2 dx - (2xy + y^2) dy = 0$

**Correct Answer :-**

•  $2xy \, dx + (2 + x^2) \, dy = 0$

9) The general solution of  $\sin px \cos y - \cos px \sin y = p$ ,  
where  $p = \frac{dy}{dx}$  and  $c$  is an arbitrary constant, is

**[Question ID = 23668]**

1.  $y = cx - \sin^{-1} c$

2.  $y = cx + \sin^{-1} c$

3.  $y = cx + \cos c$

4.  $y = x \cos^{-1} c$

**Correct Answer :-**

•  $y = cx - \sin^{-1} c$

10) The general solution of  $\frac{dy}{dx} = y \sec x$  is

**[Question ID = 23669]**

1.  $y = c (\sec x - \tan x)$

2.  $y = c (\sec x \tan x)$

3.  $y = c (\sec x + \tan x)$

4.  $y = c (\sec^2 x + \tan x)$

**Correct Answer :-**

•  $y = c (\sec x + \tan x)$

11)

If  $y = e^{2t}$  is a solution of the differential equation  $\frac{d^2y}{dt^2} - 5\frac{dy}{dt} + ky = 0$ , then the value of k is

[Question ID = 23670]

1. 2
2. 4
3. 6
4. 8

**Correct Answer :-**

- 6

12) The particular integral of the differential equation

$$(D^2 + 4D + 4)y = e^{-2x}, \text{ where } D = \frac{d}{dx} \text{ is}$$

[Question ID = 23671]

1.  $\frac{x}{2}e^{-x}$
2.  $\frac{x^2}{2}e^{-2x}$
3.  $\frac{1}{2}e^{2x}$
4.  $\frac{1}{2}e^{-2x}$

**Correct Answer :-**

- $\frac{x^2}{2}e^{-2x}$

13) The complete solution of the equation

$$\frac{d^2y}{dx^2} + 4y = \sin 2x \text{ is}$$

[Question ID = 23672]

1.  $y = c_1 \cos 2x + c_2 \sin 2x - \frac{x}{4} \cos 2x$
2.  $y = c_1 \cos 2x + c_2 \sin 2x + \frac{x}{2} \cos 2x$
3.  $y = c_1 \cos 2x + c_2 \sin 2x - \frac{x}{4} \sin 2x$

$$y = c_1 \cos 2x + c_2 \sin 2x + \frac{x}{4} \cos 2x$$

4.

**Correct Answer :-**

•  $y = c_1 \cos 2x + c_2 \sin 2x - \frac{x}{4} \cos 2x$

**14)** The general solution of the differential equation

$$\frac{d^2z}{dt^2} + 6\frac{dz}{dt} + 9z = 0 \text{ is } z = Ate^{-3t} + Be^{-3t} .$$

Which of the following is correct

**[Question ID = 23673]**

As  $t \rightarrow \infty, z \rightarrow A$  for any

1. value of B

The behaviour of  $z$  as  $t \rightarrow \infty$  depends on

2. the values of A and B

As  $t \rightarrow \infty, z \rightarrow 0$  for any

3. values of A and B

As  $t \rightarrow \infty, z \rightarrow \infty$  for any values of

4. A and B

**Correct Answer :-**

As  $t \rightarrow \infty, z \rightarrow 0$  for any

• values of A and B

**15)** The particular solution of  $\frac{d^2y}{dx^2} - 3\frac{dy}{dx} - 4y = 0$ ,  
satisfying  $y(0) = 0, y'(0) = 5$  is

**[Question ID = 23674]**

1.  $y = e^{-x} - e^{4x}$

2.  $y = e^x - e^{-4x}$

3.  $y = e^{-4x} - e^x$

4.  $y = e^{4x} - e^{-x}$

**Correct Answer :-**

•  $y = e^{4x} - e^{-x}$

**16)** The solution of  $(D^3 + 2D^2 + D)y = e^{2x}$ ,  
where  $D = \frac{d}{dx}$ , is

**[Question ID = 23675]**

1.  $y = c_1 + (c_2 + c_3x) e^{-x} + \frac{e^{2x}}{18}$

2.  $y = c_1x + (c_2 + c_3x) e^{-x} - \frac{e^{2x}}{18}$

3.  $y = c_1 + (c_2 + c_3x) e^x + \frac{e^{2x}}{18}$

4.  $y = c_1 + (c_2 + c_3x) e^{-x} + \frac{e^x}{18}$

**Correct Answer :-**

•  $y = c_1 + (c_2 + c_3x) e^{-x} + \frac{e^{2x}}{18}$

**17)** The particular integral of  $(D^4 - 1)y = e^x \cos x$ ,  
where  $D = \frac{d}{dx}$  is  $y =$

**[Question ID = 23676]**

1.  $\frac{e^x}{5} \cos x$

2.  $-\frac{e^x}{5} \cos x$

3.  $\frac{e^x}{5} \sin x$

4.  $-\frac{e^x}{5} \sin x$

**Correct Answer :-**

- $-\frac{e^x}{5} \cos x$

18) The general solution of  $(D^2 + 1)y = 3 + 7x$  is  $y =$

[Question ID = 23678]

1.  $c_1 \cosh x + c_2 \sinh x + 3 - 7x$

2.  $c_1 \cosh x + c_2 \sinh x - 3 - 7x$

3.  $c_1 \cos x + c_2 \sin x + 3 + 7x$

4.  $c_1 \cosh x + c_2 \sinh x + 7$

Correct Answer :-

- $c_1 \cos x + c_2 \sin x + 3 + 7x$

19) Let “ $\cdot$ ” be a binary operation defined on the set  $R^+$  (the set of all positive real numbers) such that  $a \cdot b = \frac{a+b}{2}$  for all  $a, b \in R^+$ . Then the identity element in  $R^+$  is

[Question ID = 23680]

1. 0 (zero)
2. 1
3. -1
4. 2

Correct Answer :-

- 2

20) If the set  $G = \{0, 1, 2, 3, 4\}$  is an abelian group with respect to addition modulo 5, then the inverse of 3 in  $G$  is [Question ID = 23681]

1. 3
2. -3
3. 2
4. 1

Correct Answer :-

- 2



21) If  $(G, \cdot)$  is a group, then for all  $x, y$  in  $G$   $(x^{-1}y)^{-1} =$

[Question ID = 23682]

1.  $xy^{-1}$

2.  $y^{-1}x$

3.  $x^{-1}y$

4.  $yx$

Correct Answer :-

•  $y^{-1}x$

22) If the set  $Z$  of all integers is a group with respect to the binary operation “ $\star$ ” defined by  $a \star b = a + b + 1 \quad \forall a, b$  in  $Z$ , then the identity element in  $Z$  is

[Question ID = 23683]

1. 0

2. 2

3. -1

4. 1

Correct Answer :-

• -1

23) Let  $R$  be the set of real numbers and If “ $\star$ ” is a binary operation defined on  $S = R - \{-1\}$  by  $a \star b = a + b + a + b$  for all  $a, b$  in  $S$  then the solution of  $2 \star x \star 3 = 7$  is

[Question ID = 23684]

1.  $-7$

2.  $\frac{1}{3}$

3.  $-\frac{1}{3}$

4.  $-\frac{1}{7}$

**Correct Answer :-**

•  $-\frac{1}{3}$

**24) Cayley's theorem states that Every finite group G is isomorphic to [Question ID = 23685]**

1. permutation group
2. Abelian group
3. cyclic group
4. Normal group

**Correct Answer :-**

- permutation group

**25) If a set S has 2 elements , then the number of different binary operations possible on S is [Question ID = 23686]**

1. 4
2. 8
3. 12
4. 16

**Correct Answer :-**

- 16

**26)  $G = \{ 1, -1, i, -i \}$  is multiplicative group where  $i = \sqrt{-1}$  The order of  $(-i)$  is**

**[Question ID = 23689]**

1. 4
2. 3
3. 2
4. 1

**Correct Answer :-**

- 4

**27) The set of all even permutations of degree 5 forms a group denoted by  $A_5$  with respect to the binary operation as product of permutations. The number of elements in  $A_5$  is**

**[Question ID = 23690]**

1. 25
2. 40
3. 50
4. 60

**Correct Answer :-**

- 60

**28) The set Z of all integers is an infinite cyclic group with respect to usual addition of integers ,the number of generators of Z is**

**[Question ID = 23691]**

1. 4
2. 3
3. 2
4. 1

**Correct Answer :-**

- 2

---

**29) If H is a subgroup of group G, then index of H in G is [Question ID = 23692]**

1. Number of elements in H
2. The order of G + The order of H
3. The order of G
4. The number of distinct left or right Cosets of H in G

**Correct Answer :-**

- The number of distinct left or right Cosets of H in G

**30) An isomorphic mapping of a group G onto itself is called [Question ID = 23694]**

1. Epimorphism
2. monomorphism
3. Endomorphism
4. automorphosm

**Correct Answer :-**

- automorphosm

---

**31) If  $\phi(x, y, z) = x^2 + y - z - 1$  then  $\text{grad } \phi$  at the point (1,0,0) is**

**[Question ID = 23695]**

1.  $2\bar{i} + \bar{j} + \bar{k}$
2.  $2\bar{i} + \bar{j} - \bar{k}$

3.  $\frac{2\bar{i} - \bar{j} + 2\bar{k}}{3}$

4.  $\frac{\bar{i} + \bar{j} - 2\bar{k}}{3}$

**Correct Answer :-**

•  $2\bar{i} + \bar{j} - \bar{k}$

**32)** If the divergence of the vector point function  $\vec{f} = (x+z)\bar{i} + (3x + \alpha y)\bar{j} + (x-5z)\bar{k}$  is zero, then the value of  $\alpha$  is

**[Question ID = 23696]**

1. -3
2. 1
3. 4
4. 2

**Correct Answer :-**

- 4

**33)** The directional derivative of  $f(x, y, z) = xyz$  at  $(1, 1, 1)$  in the direction of  $\bar{i} + \bar{j} + \bar{k}$  is

**[Question ID = 23697]**

1.  $\sqrt{3}$

2. 3

3.  $\frac{1}{\sqrt{3}}$

4.  $\frac{1}{3}$

**Correct Answer :-**

•  $\sqrt{3}$

**34)**

If  $\vec{f} = (x + 2y + az)\vec{i} + (bx - 3y - z)\vec{j} + (4x + cy + 2z)\vec{k}$  is irrotational then the values of  $a, b, c$  are

[Question ID = 23698]

1.  $a = 3, b = 2, c = 1$
2.  $a = 4, b = 2, c = -1$
3.  $a = 4, b = -1, c = -1$
4.  $a = -3, b = 1, c = -1$

Correct Answer :-

- $a = 4, b = 2, c = -1$

35) If  $\phi = x^2y + yz^2 - xz^3$ , then the maximum directional derivative of  $\phi$  at  $(-1, 2, 1)$  is

[Question ID = 23699]

1.  $2\sqrt{39}$
2. 39
3. 78
4.  $\sqrt{78}$

Correct Answer :-

- $\sqrt{78}$

36) If  $S$  is a closed surface and  $V$  is the volume enclosed by  $S$ , then the value of  $\iint_S \vec{r} \cdot d\vec{s}$  over  $S$  (where  $\vec{r} = x\vec{i} + y\vec{j} + z\vec{k}$ ) is

[Question ID = 23700]

1.  $\frac{V}{3}$

2.  $3V$

3.  $\frac{1}{3}V^3$

4.  $\frac{1}{3}$

**Correct Answer :-**

•  $3V$

**37)** The circulation of  $\vec{f} = y \vec{i} + z \vec{j} + x \vec{k}$ , round the circle  $x^2 + y^2 = 1, z = 0$  in anti clockwise direction is

**[Question ID = 23701]**

1.  $-\pi$

2.  $\pi$

3.  $\frac{\pi}{2}$

4.  $-\frac{\pi}{2}$

**Correct Answer :-**

•  $-\pi$

**38)** The value of  $\int_C (x dy - y dx)$  around the circle  $C : x^2 + y^2 = 1$  is

**[Question ID = 23702]**

1.  $\pi$

2.  $2\pi$

3.  $\frac{\pi}{3}$

1  
4.

**Correct Answer :-**

•  $2\pi$

39) The value of  $I = \int_C (x dy + y dx)$ ,  
C being the upper half of the circle  $x^2 + y^2 = a^2$  is

[Question ID = 23703]

1. 0(zero)

2. 1

3. -1

4.  $\pi$

**Correct Answer :-**

• 0(zero)

40) The distance between the planes  $2x - 3y - 6z - 21 = 0$ ,  $2x - 3y - 6z + 14 = 0$  is

[Question ID = 23705]

1.  $\frac{5}{2}$

2.  $\frac{2}{5}$

3. 5

4. 7

**Correct Answer :-**

• 5

**41) The equation of the plane making intercepts 4, 5, 2 on the coordinate axes is [Question ID = 23707]**

1.  $5x - 4y + 10z = 20$
2.  $5x + 4y + 10z = 20$
3.  $5x + 4y + 10z = 1$
4.  $5x + 4y + 10z = 0$

**Correct Answer :-**

- $5x + 4y + 10z = 20$

**42) The length of the tangent from the point (3, 2, 1) to the sphere  $x^2 + y^2 + z^2 - 2x + 5y + 7 = 0$  is**

**[Question ID = 23709]**

1. 1
2. 3
3. 5
4. 7

**Correct Answer :-**

- 5

**43) The direction cosines of the normal to the plane  $x + 2y + 2z = 6$  are [Question ID = 23710]**

1.  $1/6, 1/6, 1/6$
2.  $1/3, 2/3, 2/3$
3.  $1, 2, 2$
4.  $\frac{1}{\sqrt{3}}, \frac{1}{\sqrt{3}}, \frac{1}{\sqrt{3}}$

**Correct Answer :-**

- $1/3, 2/3, 2/3$

**44) The equation of the plane passing through the line of intersection of planes  $x - 3y + 2z + 3 = 0$ , and  $3x - y - 2z - 5 = 0$ , and the origin is**

**[Question ID = 23712]**

1.  $7x - 9y - 2z = 0$
2.  $7x - 9y - 2z + 1 = 0$
3.  $7x - 9y + 2z = 0$



4.  $7x + 9y + 2z = 0$

**Correct Answer :-**

•  $7x - 9y + 2z = 0$

**45) The equation of the plane through the points (2, 2, 1) and (9, 3, 6) and perpendicular to the plane  $2x + 6y + 6z = 9$  is [Question ID = 23713]**

1.  $3x + 4y - 5z = 9$
2.  $3x - 4y + 5z = 9$
3.  $4x + 3y + z = 15$
4.  $x + y + z = 18$

**Correct Answer :-**

•  $3x + 4y - 5z = 9$

**46) If the plane  $3x + y + 2z = 12$ , cuts the coordinate axes at the points A, B, C then the length of the vector joining the origin and centroid of the triangle ABC is [Question ID = 23714]**

1.  $31/3$
2.  $14/3$
3.  $16/3$
4. 1

**Correct Answer :-**

•  $14/3$

**47) The equation of the line in symmetrical form which lies on the planes  $x = ay + b$ ,  $z = cy + d$  is [Question ID = 23715]**

1.  $\frac{x-b}{a} = \frac{y}{a} = \frac{z-d}{c}$

2.  $\frac{x-b}{a} = \frac{y}{c} = \frac{z}{c}$

3.  $\frac{x+b}{a} = \frac{y-b}{1} = \frac{z-d}{c}$

4.  $\frac{x-b}{a} = \frac{y}{1} = \frac{z-d}{c}$

**Correct Answer :-**

•  $\frac{x-b}{a} = \frac{y}{1} = \frac{z-d}{c}$

**48) If the lines  $\frac{x-1}{-3} = \frac{y-2}{2k} = \frac{z-3}{2}$  and  $\frac{x-1}{3k} = \frac{y-5}{1} = \frac{z-6}{-5}$  are perpendicular to each other, then the value of k is**

[Question ID = 23716]

1.  $\frac{-10}{7}$

2.  $\frac{10}{7}$

3.  $\frac{1}{7}$

4.  $\frac{-7}{10}$

Correct Answer :-

•  $\frac{-10}{7}$

49) The equation of the sphere described on the line joining the points  $(-3, 2, 1)$  and  $(5, 4, -2)$  as diameter is

[Question ID = 23717]

1.  $x^2+y^2+z^2 + x - y - 2z + 9 = 0$

2.  $x^2+y^2+z^2 + y - 2z - 14 = 0$

3.  $x^2+y^2+z^2 - 2x - 6y + z - 9 = 0$

4.  $x^2+y^2+z^2 - x + y - 2z - 8 = 0$

Correct Answer :-

•  $x^2+y^2+z^2 - 2x - 6y + z - 9 = 0$

50)

The foot of the perpendicular from (3, -1, 11)  
on to the line  $\frac{x}{2} = \frac{y-2}{3} = \frac{z-3}{4}$  is

[Question ID = 23718]

1. (2, 5, 7)
2. (0, 2, 3)
3. (2, 3, 4)
4. (3, 2, 11)

**Correct Answer :-**

- (2, 5, 7)

51) The radius of the circle  $x^2 + y^2 + z^2 = 25$ ,  $x + 2y + 2z = 9$  is

[Question ID = 23719]

1. 4
2. 5
3. 2
4. 7

**Correct Answer :-**

- 4

52) A set is called an open set if and only if [Question ID = 23720]

1. S is a finite set
2. every point of S is limit point of S
3. every point of S is an interior point of S
4. every point of S is a boundary point S

**Correct Answer :-**

- every point of S is an interior point of S

53) if  $A_n = \{ x : -\frac{n}{n+1} \leq x \leq \frac{n}{n+1} \}$ ,

$n = 1, 2, \dots$  then  $\bigcup_{n=1}^{\infty} A_n =$

[Question ID = 23721]

1.  $\{0\}$
2.  $\{ x : -1 < x < 1 \}$
3.  $\emptyset$  (null set)

4.  $\{\Phi\}$

**Correct Answer :-**

•  $\{x: -1 < x < 1\}$

**54) A sequence is Convergent if and only if [Question ID = 23722]**

1. it is not bounded
2. it has no limit points
3. it is bounded and has a unique limit point
4. it is bounded and has many limit points

**Correct Answer :-**

- it is bounded and has a unique limit point

**55)** If  $u_n = (1 + \frac{1}{n})^{-n^2}$ , then  $\lim_{n \rightarrow \infty} u_n^{1/n} =$

**[Question ID = 23723]**

1.  $\frac{1}{n}$

2.  $n$

3.  $\frac{1}{e}$

4.  $1$

**Correct Answer :-**

•  $\frac{1}{e}$

**56)** The series  $\frac{1}{\sqrt{2}} - \frac{1}{\sqrt{3}} + \frac{1}{\sqrt{4}} - \frac{1}{\sqrt{5}} + \dots$  is

**[Question ID = 23724]**

1. Conditionally convergent
2. oscillatory
3. Divergent
4. absolutely convergent

**Correct Answer :-**

- Conditionally convergent

**57) Every absolutely convergent series is [Question ID = 23725]**

1. Convergent
2. divergent
3. Conditionally convergent
4. oscillatory

**Correct Answer :-**

- Convergent

**58)** The function  $f(x) = \frac{1-\cos^2 x}{x}$ , for  $x \neq 0$ ,

$f(x) = 1$  when  $x = 0$  has

**[Question ID = 23726]**

1. Removable discontinuity at  $x = 0$
2. oscillatory discontinuity at  $x = 0$
3. infinite discontinuity
4. Discontinuity of second kind from left at  $x = 0$

**Correct Answer :-**

- Removable discontinuity at  $x = 0$

**59)** If a function  $f$  is continuous on  $[a, b]$  and

$f(a) \neq f(b)$ , then it assumes every value between

**[Question ID = 23727]**

1.  $a$  and  $b$
2.  $0$  and  $f(b)$
3.  $f(a)$  and  $f(b)$
4.  $f(a)$  and  $f(b)$  atleast once

**Correct Answer :-**

- $f(a)$  and  $f(b)$  atleast once

**60)** The series  $\sum \frac{1}{n^p}$ ,

(where  $p \leq 1$  is a real number) is

**[Question ID = 23728]**

1. Convergent
2. Divergent

- 3. Oscillates finitely
- 4. Oscillates infinitely

**Correct Answer :-**

- Divergent

61) If  $\{y_n\}$  is a sequence defined by  $y_n = 1 + \frac{1}{1!} + \frac{1}{2!} + \frac{1}{3!} + \dots + \frac{1}{n!}$ .

Then correct one of the following is

[Question ID = 23729]

1.  $2 \leq y_n < 3$  for all n
2. the sequence is Oscillating finitely
3. the sequence is divergent
4. conditionally convergent

**Correct Answer :-**

- $2 \leq y_n < 3$  for all n

62) If  $I = [0, 4]$  and  $P$  is a partition,  $P = (0, 1, 2, 4)$ , then the norm of the partition is [Question ID = 23732]

1. 2
2. 1
3. 0
4. 3

**Correct Answer :-**

- 1

63) The value of  $\lim_{x \rightarrow 0} \frac{\log(1+x^3)}{\sin^3 x}$  is

[Question ID = 23733]

1. 0(zero)

2. 1

3. 2

4.  $\infty$

**Correct Answer :-**

• 1

64) The value of  $\lim_{x \rightarrow 0} \frac{e^{2x} - (1+x)^2}{x \log(1+x)}$  is

[Question ID = 23734]

1. 2

2. 1

3.  $\infty$

4. e

**Correct Answer :-**

• 1

65) The idempotent elements in the ring  $(\mathbb{Z}_6, +_6, \cdot_6)$  are

[Question ID = 23735]

1. 3 and 4

2. 1 and 4

3. 1 and 3

4. 2 and 5

**Correct Answer :-**

• 3 and 4

**66) If R is a Commutative division ring then R is called [Question ID = 23736]**

1. An integral domain
2. An ideal of the ring
3. field
4. simple ring

**Correct Answer :-**

- field

**67) The Nilpotent elements of a ring  $(Z_8, +_8, \cdot_8)$  are**

**[Question ID = 23737]**

1. 2 and 4
2. 3 and 4
3. 1 and 3
4. 2 and 5

**Correct Answer :-**

- 2 and 4

**68) The characteristic of the ring  $(z_6, +_6, \times_6)$  where**

$$z_6 = \{ 0, 1, 2, 3, 4, 5 \} \text{ is}$$

**[Question ID = 23738]**

1. 2
2. 3
3. 5
4. 6

**Correct Answer :-**

- 6

**69) If in a Ring there exist non-zero elements  $a$  and  $b$  such that  $ab$  and  $ba$ , then  $a$  and  $b$  are called**

**[Question ID = 23739]**

1. Nilpotent elements
2. Associates
3. Idempotent elements
4. units

**Correct Answer :-**

- Associates



70) If  $R$  is a ring with characteristic 2, and  $x, y$  are two elements of  $R$  such that  $xy = yx$ , then  $(x - y)^2 =$

[Question ID = 23740]

1.  $x^2 + y^2$
2.  $x^2 - y^2$
3.  $x^2 - y^2 = xy$
4.  $x^2 + y^2 = xy$

Correct Answer :-

•  $x^2 + y^2$

71) A field has [Question ID = 23741]

1. no proper ideal
2. one proper ideals
3. two proper ideals
4. three proper ideals

Correct Answer :-

- no proper ideal

72) If  $Z$  is a commutative ring of integers and

$[3] = \{3n : n \in Z\}$  is an ideal in  $Z$ , then  $[3]$  is

[Question ID = 23742]

1. Principal ideal
2. only a left ideal of  $Z$
3. Prime ideal
4. only a right ideal of  $Z$

Correct Answer :-

- Prime ideal

73) If  $T: R^2 \rightarrow R^2$  is defined such that  $T(1, 0) = (1, 1)$  and  $T(0, 1) = (-1, 2)$ , then the Linear transformation  $T$  is

**[Question ID = 23743]**

1.  $T(x, y) = (x - y, x - 2y)$
2.  $T(x, y) = (x - y, x + 2y)$
3.  $T(x, y) = (xy, x + y)$
4.  $T(x, y) = (xy, 2x - y)$

**Correct Answer :-**

- $T(x, y) = (x - y, x + 2y)$

**74) If  $Z[i]$  denotes the ring of Gaussian integers, then the exact number of associates for each element in  $Z[i]$  is [Question ID = 23744]**

1. 1
2. 3
3. 4
4. 2

**Correct Answer :-**

- 4

**75) In a field of complex numbers, the vectors  $(a_1, a_2)$  and  $(b_1, b_2)$  are linearly dependent if and only if**

**[Question ID = 23745]**

1.  $a_1b_2 + a_2b_1 = 0$
2.  $a_1b_2 - a_2b_1 = 0$
3.  $a_1a_2 - b_1b_2 = 0$
4.  $a_1a_2 + b_1b_2 = 0$

**Correct Answer :-**

- $a_1b_2 - a_2b_1 = 0$

**76) The coordinate vector of  $(2i, 3 + 4i, 5)$  with respect to the basis  $S = \{ (1, 0, 0), (1, 1, 0), (1, 1, 1) \}$  of  $C_3(C)$  is**

**[Question ID = 23746]**

1.  $(-3 - 2i, -2 + 4i, 5)$
2.  $(5, i + 2, i)$
3.  $(i, i + 1, 1)$
4.  $(1, 5 + 2i, 2 + i)$

**Correct Answer :-**

- $(-3 - 2i, -2 + 4i, 5)$

**77)** If  $U(F)$  and  $V(F)$  are two vector spaces and  $T : U \rightarrow V$  is a linear transformation and  $U$  is finite dimensional, then  $\text{Rank}(T) =$

**[Question ID = 23748]**

1.  $\text{Nullity}(T) - \dim U$
2.  $\dim U - \text{Nullity}(T)$
3.  $\dim U + \text{Nullity}(T)$
4.  $\dim(UV)$

**Correct Answer :-**

- $\dim U - \text{Nullity}(T)$

**78)** If  $\alpha = (1, 2, -3, 4)$ ,  $\beta = (3, 4, 1, -2)$  and  $\gamma = (3, -2, 1, 1)$ ,  
then  $\|\alpha + \beta + \gamma\|^2 =$

**[Question ID = 23749]**

1.  $\sqrt{75}$
2. 75
3.  $\sqrt{35}$
4. 35

**Correct Answer :-**

- 75

**79)** If  $T: R^3 \rightarrow R^3$  is defined by  $T(x, y, z) = (2x, 4x - y, 2x + 3y - z)$   
(for all  $x, y, z$  in  $R$ ), then  $T^{-1}(x, y, z) =$

**[Question ID = 23750]**

1.  $(x/2, 2x - y, 7x - 3y - z)$
2.  $(x/2, 2x + y, 7x - 3y - z)$
3.  $(x/2, 2x - y, 7x - 3y)$
4.  $(x/2, 2x, 7x - 3y - z)$

**Correct Answer :-**

- $(x/2, 2x - y, 7x - 3y - z)$

**80)** If  $T: R^2 \rightarrow R^3$  is the linear transformation given by

$T(a, b) = (a+b, 2a - b, 7b)$  then the matrix  $A$  of linear transformation with respect to the standard bases of  $R^2$  and  $R^3$  is

**[Question ID = 23751]**

1.  $\begin{bmatrix} 1 & 1 \\ 2 & -1 \\ 3 & 0 \end{bmatrix}$

2.  $\begin{bmatrix} 1 & 1 \\ 2 & -1 \\ 0 & 7 \end{bmatrix}$

3.  $\begin{bmatrix} 1 & 1 \\ 2 & -1 \\ 3 & 8 \end{bmatrix}$

4.  $\begin{bmatrix} 1 & 1 \\ 2 & -1 \\ 4 & 7 \end{bmatrix}$

**Correct Answer :-**

•  $\begin{bmatrix} 1 & 1 \\ 2 & -1 \\ 0 & 7 \end{bmatrix}$

**81)** The matrix  $A = \begin{bmatrix} \frac{i}{2} & \frac{\sqrt{3}}{2} \\ \frac{\sqrt{3}}{2} & \frac{i}{2} \end{bmatrix}$  is

**[Question ID = 23752]**

1. skew Hermitian
2. symmetric

3. singular
4. unitary

**Correct Answer :-**

- unitary

**82)**

If the rank of matrix  $A = \begin{bmatrix} 3 & 5 & \lambda \\ 2 & 1 & -1 \\ 1 & 4 & 2 \end{bmatrix}$  is 2, then the value of  $\lambda$  is

**[Question ID = 23753]**

1. -1
2. 1
3. 2
4. 3

**Correct Answer :-**

- 1

**83)**

If  $\alpha = (1, 2, 2)$ , then  $\frac{1}{\|\alpha\|} \alpha =$

**[Question ID = 23754]**

1.  $(\frac{1}{3}, \frac{2}{3}, \frac{2}{3})$
2.  $(\frac{1}{2}, \frac{2}{3}, \frac{2}{3})$
3.  $(\frac{1}{\sqrt{3}}, \frac{2}{\sqrt{3}}, \frac{2}{\sqrt{3}})$
4. 1

**Correct Answer :-**

- $(\frac{1}{3}, \frac{2}{3}, \frac{2}{3})$

**84)** In the vector space  $R^3$ , the angle between the vectors

$\alpha = (2, 1, 5)$  and  $\beta = (1, -3, 2)$  is

[Question ID = 23755]

1.  $\pi$

2.  $\frac{\pi}{2}$

3.  $\cos^{-1} \frac{1}{5}$

4.  $\cos^{-1} \frac{9}{2\sqrt{105}}$

**Correct Answer :-**

•  $\cos^{-1} \frac{9}{2\sqrt{105}}$

85) If  $\alpha = (1, 3, 5, 7)$  and  $\beta = (4, -2, 8, 1)$ , then  $d(\alpha, \beta) =$   
( distance between  $\alpha$  and  $\beta$  is denoted by  $d(\alpha, \beta)$  )

[Question ID = 23756]

1.  $\sqrt{39}$

2.  $\sqrt{79}$

3.  $\sqrt{69}$

4.  $\sqrt{59}$

**Correct Answer :-**

•  $\sqrt{79}$

86) If  $\alpha, \beta$  are two vectors of an inner product space such that  $|(\alpha, \beta)| = \|\alpha\| \|\beta\|$ , then  $\alpha, \beta$   
are

[Question ID = 23757]

1. linearly dependent

2. linearly independent
3. orthonormal
4. orthogonal

**Correct Answer :-**

- linearly dependent

**87)** The angle between the vectors  $\alpha = (3, 0, 2)$  and  $\beta = (0, 2, 0)$  is

**[Question ID = 23758]**

1.  $\pi$
2.  $\pi/3$
3.  $\pi/2$
4.  $\pi/4$

**Correct Answer :-**

- $\pi/2$

**88)** The eigen values of  $A = \begin{bmatrix} 2 & 3 + 4i \\ 3 - 4i & 2 \end{bmatrix}$  are

**[Question ID = 23759]**

1. 3 and 7
2. -3 and 7
3. 3 and -7
4. -3 and -7

**Correct Answer :-**

- -3 and 7

**89)** The solution of  $x^2 \frac{d^2y}{dx^2} + 3x \frac{dy}{dx} + y = \log x$  is  $y =$

**[Question ID = 23980]**

1.  $(c_1 + c_2 \log x) \frac{1}{x} + \log x - 2$

$$(c_1 + c_2 \log x) + \log x - 2$$

2.

$$(c_1 + c_2 \log x) \frac{1}{x} + 2$$

3.

$$(c_1 + c_2 \log x) \frac{1}{x} + \log x$$

4.

**Correct Answer :-**

$$(c_1 + c_2 \log x) \frac{1}{x} + \log x - 2$$

•

---

90) The two independent solutions of  $y'' + ay' + by = 0$  are  $e^{5x}$  and  $xe^{5x}$ , then a particular solution of it satisfying  $y(0)=2$  and  $y'(0) = 0$  is  $y =$

**[Question ID = 23981]**

1.  $2e^{5x} - 10xe^{5x}$

2.  $2e^{5x} - 10e^{5x}$

3.  $2xe^{5x} - 10e^{5x}$

4.  $2x - 10e^{5x}$

**Correct Answer :-**

•  $2e^{5x} - 10xe^{5x}$

91) The set of all positive rational numbers denoted by  $Q^+$ , is a group with respect to the binary operation " $\circ$ " is defined by  $a \circ b = \frac{a \cdot b}{2} \forall a, b \in Q^+$ , then the sum of inverses of  $a$  and  $16/a$  is

**[Question ID = 23982]**

1.  $\frac{4}{a} + \frac{a}{4}$

2.  $\frac{a}{4} + \frac{a}{16}$



3.  $\frac{2}{a} + \frac{a}{2}$

4.  $\frac{a}{2} + \frac{a}{4}$

**Correct Answer :-**

•  $\frac{4}{a} + \frac{a}{4}$

92) On the set of integers  $Z$ , a binary operation “ $\bullet$ ” defined by  $a \bullet b = 2a + b - 4 \quad \forall a, b \text{ in } Z$ . Then

[Question ID = 23983]

1.  $(Z, \bullet)$  is a group

2. in  $Z$ ,  $\bullet$  follows associative law

3.  $(Z, \bullet)$  is not a group

4.  $\bullet$  follows associative and identity laws in  $Z$

**Correct Answer :-**

•  $(Z, \bullet)$  is not a group

93) If  $H$  and  $K$  are finite subgroups of a group  $G$ , then  $O(HK) =$  [Question ID = 23984]

1.  $\frac{O(H)O(K)}{O(H \cap K)}$

2.  $\frac{O(H \cap K)}{O(H)O(K)}$

3.  $\frac{O(H)O(K)}{O(H)}$

4.  $O(H)O(K)$

**Correct Answer :-**

$$\frac{O(H)O(K)}{O(H \cap K)}$$

- $O(H \cap K)$

94) If  $\vec{f} = (1+x^2)\vec{i} - y^3\vec{j}$  and C is the arc of the parabola  $y = x^2$  in the xy plane from (0,0) to (1, 1) then  $\int_C \vec{f} \cdot d\vec{r}$  is

[Question ID = 23985]

1.  $\frac{13}{12}$

2.  $\frac{12}{13}$

3.  $\frac{11}{12}$

4.  $\frac{12}{11}$

Correct Answer :-

- $\frac{13}{12}$

95) The distance of the point P(2,1, -1) from the plane  $2x + 3y - 6z + 5 = 0$  is

[Question ID = 23986]

1.  $\frac{18}{7}$  units

2.  $\frac{18}{5}$  units

3.  $\frac{7}{9}$  units

4.  $\frac{11}{18}$  units

Correct Answer :-

- $\frac{18}{7}$  units

96) The point of intersection of the line  $\frac{x-2}{2} = \frac{y-1}{-3} = \frac{z-3}{2}$  and the plane  $2x + y - z = 3$  is

[Question ID = 23987]

1. (1, 4, 1)
2. (4, 0, 1)
3. (4, 1, 0)
4. (0, 4, 1)

Correct Answer :-

- (0, 4, 1)

97) The equation of the plane passing through the point (4, 0, 1) and parallel to the plane  $4x + 3y - 12z + 6 = 0$  is

[Question ID = 23988]

1.  $4x - 3y + 12z - 4 = 0$
2.  $4x + 3y - 12z + 4 = 0$
3.  $4x - 3y - 12z - 4 = 0$
4.  $4x + 3y - 12z - 4 = 0$

Correct Answer :-

- $4x - 3y + 12z - 4 = 0$

98)

The function  $f(x) = x\sqrt{a^2 - x^2}$  satisfies all the conditions of Rolle's mean value theorem on  $[0, a]$ . The point  $c$  of the mean value theorem is

[Question ID = 23989]

1.  $a/2$
2.  $\frac{a}{\sqrt{2}}$
3.  $\sqrt{a/2}$
4.  $\frac{\sqrt{2}}{a}$

Correct Answer :-

$$\frac{a}{\sqrt{2}}$$

99) If the function  $f(x) = x^2 \sin \frac{1}{x}$ ,  $x \neq 0$ ,  $f(0) = 0$ ,

then which of the following is true

[Question ID = 23990]

$f(x)$  is continuous at

1.  $x = 0$  but not derivable

2.  $f(x)$  is derivable but not continuous at  $x = 0$

3.  $f(x)$  derivable but  $f'(x)$  is not continuous at  $x = 0$

4.  $f'(x)$  is both derivable and continuous at  $x = 0$

**Correct Answer :-**

$f(x)$  derivable but  $f'(x)$  is not continuous at  $x = 0$

100) If  $T_1 : R^3(\mathbb{R}) \rightarrow R^2$  and  $T_2 : R^3(\mathbb{R}) \rightarrow R^2$  are two linear transformations defined by  $T_1(x, y, z) = (3x, y + z)$  and

$T_2(x, y, z) = (2x - z, y)$ , Then  $(4T_1 - 5T_2)(x, y, z) =$

[Question ID = 23991]

1.  $(0, y)$

2.  $(y, -zx)$

3.  $(2x + 5z, -y + 4z)$

4.  $(x + 5y, y + z)$

**Correct Answer :-**

$(2x + 5z, -y + 4z)$

Topic:- B.Sc\_Analytical\_Ability\_Set2

1) The number 'x' in the series 4,7,12,21,x,71 is [Question ID = 23993]

1. 23
2. 50
3. 42
4. 38

**Correct Answer :-**

- 38

**2) Select the best suitable answer to fill the blank. "Cup is to coffee" : bowl is to \_\_\_\_\_**  
**[Question ID = 23994]**

1. Dish
2. Soup
3. Spoon
4. Food

**Correct Answer :-**

- Soup

**3) If the word 'PRIVATE' is coded as 1234567 and the word 'RISK' is coded as 2398, then how is 'RIVETS' coded?**

**[Question ID = 23995]**

1. 234679
2. 243769
3. 234769
4. 234976

**Correct Answer :-**

- 234769

**4) If 'PALE' is coded as 2134, 'EARTH' is coded as 41590, how is 'PEARL' coded in that language**

**[Question ID = 23996]**

1. 29530
2. 24153
3. 25413
4. 25412

**Correct Answer :-**

- 24153

5) If 'tee see pee' means 'drink fruit juice'; 'see kee lee' means 'juice is sweet' and 'lee ree mee' means 'he is intelligent', which word in that language does mean 'sweet'?

[Question ID = 23997]

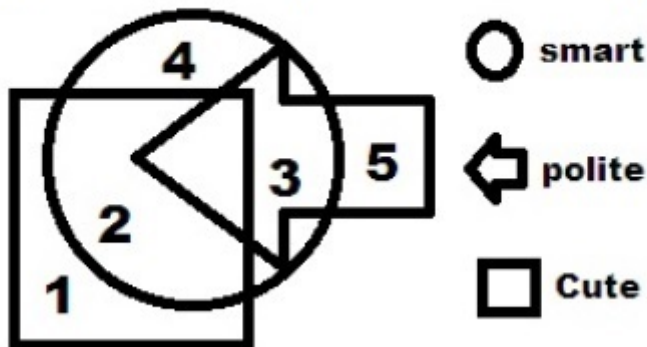
1. see
2. kee
3. lee
4. pee

**Correct Answer :-**

- kee

6)

Five people are numbered and have some characteristics. Study the diagram to answer correctly. Which number person is smart but not polite



[Question ID = 23998]

1. 1
2. 5
3. 3
4. 4

**Correct Answer :-**

- 4

7)

On which day in April is Gautam's birthday?

**Statements:**

I. Gautam was born exactly 28 years after his mother was born.

II. His mother will be 55 years 4 months and 5 days on August 18 this year.

To answer the above question, the statements I and II are such that

**[Question ID = 23760]**

1. the data given in statement I alone is sufficient.
2. the data given in statement II alone is sufficient.
3. the data given in both the statements I and II put together are sufficient but neither of the statement alone is sufficient.
4. the data given in both the statements I and II put together are not sufficient and additional data is needed.

**Correct Answer :-**

- the data given in both the statements I and II put together are sufficient but neither of the statement alone is sufficient.

8) .What will be the total weight of 10 poles, if each of them are uniform and of same weight?

**Statements:**

- I. One-fourth of the weight of each uniform pole is 5 kg.
- II. The total weight of three uniform poles is 20 kilograms more than the total weight of two non-uniform poles

To answer the above question, the statements I and II are such that

**[Question ID = 23761]**

1. the data given in statement I alone is sufficient.
2. the data given in statement II alone is sufficient.
3. the data given in both the statements I and II put together are sufficient but neither of the statement alone is sufficient.
4. the data given in both the statements I and II put together are not sufficient and additional data is needed.

**Correct Answer :-**

- the data given in statement I alone is sufficient.

9) On which day of the week was birth day of Sahil ?

**Statements:**

- I. Sahil celebrated his birth day the very next day on which, Arun celebrated his birth day.
- II. The sister of Sahil was born on the 3<sup>rd</sup> day of the week

To answer the above question, the statements I and II are such that

**[Question ID = 23762]**

1. the data given in statement I alone is sufficient.
2. the data given in statement II alone is sufficient.
3. the data given in both the statements I and II put together are sufficient but neither of the statement alone is sufficient.

4. the data given in both the statements I and II put together are not sufficient and additional data is needed.

**Correct Answer :-**

- the data given in both the statements I and II put together are not sufficient and additional data is needed.

**10)** Among A, B, C, D and E, who is in the middle while standing in a row?

**Statements:**

I. C is third to the left of D and is to the immediate right of A

II. C is second to the left of E, who is not at any of the ends and who is third to the right of A.

D is at one of the ends.

To answer the above question, the statements I and II are such that

**[Question ID = 23763]**

1. the data given in statement I alone is sufficient.
2. the data given in statement II alone is sufficient.
3. the data given in both the statements I and II put together are sufficient but neither of the statement alone is sufficient.
4. the data given in both the statements I and II put together are not sufficient and additional data is needed.

**Correct Answer :-**

- the data given in statement II alone is sufficient.

**11)** On a T.V. channel, four serials A, B, C and D were screened, one on each day on four consecutive days but not necessarily in that order. On which day was the serial C screened

**Statements:**

I. The first serial was screened on 23rd, Tuesday and was followed by serial D.

II. Serial A was not screened on 25th and one serial was screened between serials A and B.

To answer the above question, the statements I and II are such that

**[Question ID = 23764]**

1. the data given in statement I alone is sufficient.
2. the data given in statement II alone is sufficient.
3. the data given in both the statements I and II put together are sufficient but neither of the statement alone is sufficient.
4. the data given in both the statements I and II put together are not sufficient and additional data is needed.

**Correct Answer :-**



- the data given in both the statements I and II put together are sufficient but neither of the statement alone is sufficient.

**12)** How is X related to Y?

I: Y says "I have only one brother"

II: X says "I have only one sister"

To answer the above question, the statements I and II are such that

**[Question ID = 23765]**

1. the data given in statement I alone is sufficient.
2. the data given in statement II alone is sufficient.
3. the data given in both the statements I and II put together are sufficient but neither of the statement alone is sufficient.
4. the data given in both the statements I and II put together are not sufficient and additional data is needed.

**Correct Answer :-**

- the data given in both the statements I and II put together are not sufficient and additional data is needed.

**13)** Who is to the immediate right of P among five persons P, Q, R, S and T facing North ?

Statements :

I .R is third to the left of Q and P is second to the left of R.

II.Q is to the immediate left of T who is second to the left of P.

To answer the above question, the statements I and II are such that

**[Question ID = 23766]**

1. the data given in statement I alone is sufficient.
2. the data given in statement II alone is sufficient.
3. the data given in both the statements I and II put together are sufficient but neither of the statement alone is sufficient.
4. the data given in both the statements I and II put together are not sufficient and additional data is needed.

**Correct Answer :-**

- the data given in statement I alone is sufficient.

**14)**

Among T, V, B, E and C, who is third from the top when arranged in the descending order of their weights ?

Statements:

I .B is heavier than T and C and is less heavier than V who is not the heaviest

II .C is heavier than only T

To answer the above question, the statements I and II are such that

**[Question ID = 23767]**

1. the data given in statement I alone is sufficient.
2. the data given in statement II alone is sufficient.
3. the data given in both the statements I and II put together are sufficient but neither of the statement alone is sufficient.
4. the data given in both the statements I and II put together are not sufficient and additional data is needed.

**Correct Answer :-**

- the data given in statement I alone is sufficient.

---

**15) Can Ritesh retire from office X in January 2006, with full pension benefits?**

Statements:

I.Ritesh will complete 30 years of service in office X in April 2000 and desires to retire.

II.As per office X rules, an employee has to complete minimum 30 years of service and attain age of 60. Ritesh has 3 years to complete age of 60.

To answer the above question, the statements I and II are such that

**[Question ID = 23768]**

1. the data given in statement I alone is sufficient.
2. the data given in statement II alone is sufficient.
3. the data given in both the statements I and II put together are sufficient but neither of the statement alone is sufficient.
4. the data given in both the statements I and II put together are not sufficient and additional data is needed.

**Correct Answer :-**

- the data given in both the statements I and II put together are not sufficient and additional data is needed.

---

**16)**

What is Gagan's age

Statements :

I. Gagan, Vimal and Kunal are all of the same age

II. Total age of Vimal, Kunal and Anil is 32 years and Anil is as old as Vimal and Kunal together.

To answer the above question, the statements I and II are such that

**[Question ID = 23769]**

1. the data given in statement I alone is sufficient.
2. the data given in statement II alone is sufficient.
3. the data given in both the statements I and II put together are sufficient but neither of the statement alone is sufficient.
4. the data given in both the statements I and II put together are not sufficient and additional data is needed.

**Correct Answer :-**

- the data given in both the statements I and II put together are not sufficient and additional data is needed.

**17) If the first half of the alphabets is written in the reverse order, which letter will be the nineteenth from your right? [Question ID = 23770]**

1. H
2. F
3. D
4. E

**Correct Answer :-**

- F

**18) Among five boys, Vasu is taller than Manohar, but not tall as Raju. Jayanth is taller than Dutta, but shorter than Manohar .Who is the tallest boy in the group [Question ID = 23771]**

1. Raju
2. Manohar
3. Vasu
4. Jayanth

**Correct Answer :-**

- Raju

**19) Six students are sitting in a row. K is sitting between V and R .V is sitting next to M. M is sitting next to the one sitting on the extreme left. Q is sitting next to R .B is sitting on the extreme left .The students sitting adjacent to V are. [Question ID = 23772]**

1. R and Q
2. B and M
3. K and R
4. M and K

**Correct Answer :-**

- M and K

**20) The wrong number in the series 7, 8, 12, 20, 37, 62 is [Question ID = 23773]**

1. 37
2. 62
3. 20
4. 12

**Correct Answer :-**

- 20

**21) The next number which comes in the series 8, 6, 9, 23, 87 is [Question ID = 23774]**

1. 128
2. 226
3. 324
4. 429

**Correct Answer :-**

- 429

**22) What number comes in the blank space of the sequence 243, 162, 108, 72, \_\_\_\_\_, 32 ? [Question ID = 23775]**

1. 60
2. 45
3. 25
4. 28

**Correct Answer :-**

- 45

**23) What number should come next in the number sequence given below ?**

2 2 3 2 3 4 2 3 4 5 2 3 4 5 6 2 3 4 5 6

**[Question ID = 23776]**

1. 2
2. 7
3. 8
4. 3

**Correct Answer :-**

- 7

**24) The next number in the series 80, 10, 70, 15, 60 is [Question ID = 23778]**

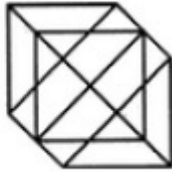
1. 20
2. 25

- 3. 30
- 4. 50

**Correct Answer :-**

- 20

25) The number of triangles in the figure given below is



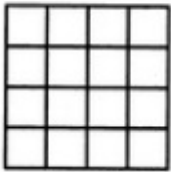
**[Question ID = 23780]**

- 1. 18
- 2. 20
- 3. 24
- 4. 27

**Correct Answer :-**

- 24

26) The number of squares in the figure given below is



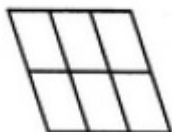
**[Question ID = 23781]**

- 1. 32
- 2. 30
- 3. 29
- 4. 28

**Correct Answer :-**

- 30

27) The number of parallelograms in figure given below is



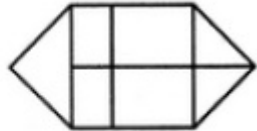
[Question ID = 23782]

1. 20
2. 18
3. 16
4. 12

**Correct Answer :-**

- 18

28) The number of rectangles in the figure given below is



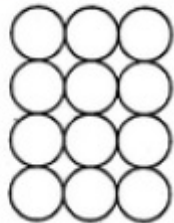
[Question ID = 23783]

1. 10
2. 7
3. 8
4. 9

**Correct Answer :-**

- 9

29) In the adjoining figure, if the centres of all the circles are joined by horizontal and vertical lines, then find the number of squares that can be formed.



[Question ID = 23784]

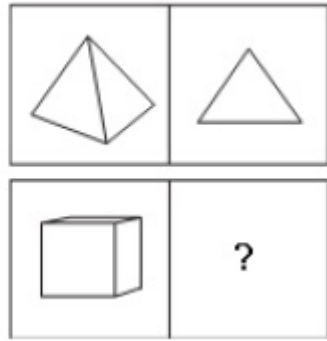
1. 6
2. 7
3. 8
4. 1

**Correct Answer :-**





- 8

30)

Choose the picture that would go in the empty box so that the two bottom pictures are related in the same way as the top two are related.



[Question ID = 23785]

1. 
2. 
3. 
4. 

**Correct Answer :-**



**31)** The words in the bottom row are related in the same way as the words in the top row.  
Find the word that completes the bottom row of words

Daisy	flower	plant
Bungalow	house	—

[Question ID = 23787]

1. Building
2. Cottage
3. Apartment
4. City

**Correct Answer :-**

- Building

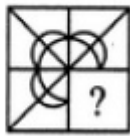
**32) Mark the odd pair [Question ID = 23788]**

1. Nice – Good
2. Beautiful – Ugly
3. Praise – Blame
4. Fat – Thin

**Correct Answer :-**

- Nice – Good

**33) Identify the figure that completes the pattern.**



**[Question ID = 23789]**



1.



2.



3.



4.

**Correct Answer :-**



•

**34) If ENGLAND is written as 1234526 and FRANCE is written as 785291, how is GREECE coded?  
[Question ID = 23792]**

1. 381171
2. 835545
3. 381191
4. 832252



**Correct Answer :-**

- 381191

**35) In a certain code, 253 means 'books are old', 546 means "man is old", 378 mean "buy good books". What stands for "are" in that code? [Question ID = 23793]**

1. 2
2. 5
3. 6
4. 4

**Correct Answer :-**

- 2

**36) In a certain code, a number 13479 is written as A Q F J L and 2568 is written as D M P N. How is 396824 written in that code? [Question ID = 23794]**

1. Q L P M N F
2. Q L P N M F
3. Q L P N M J
4. Q L P N D F

**Correct Answer :-**

- Q L P N D F

**37) If in a certain language, MADRAS is coded as NBESBT, how is BOMBAY coded in that language? [Question ID = 23796]**

1. CPNCBX
2. CPNCBZ
3. CPOCBZ
4. CQOCBZ

**Correct Answer :-**

- CPNCBZ

**38) Using the below coding, the number 879341 represent the coded word**

Digit	7	2	1	5	3	9	8	6	4
Letter	W	L	M	S	I	N	D	J	B

**[Question ID = 23797]**

1. DWNIBS
2. DWNBIM
3. DWNIBM
4. NDWBIM

**Correct Answer :-**

- DWNIBM

**39) In a certain code, '786' means 'study very hard', '958' means 'hard work pays' and '645' means 'study and work'. Which of the following is the code for 'very'? [Question ID = 23798]**

1. 8
2. 6
3. 7
4. 9

**Correct Answer :-**

- 7

**40) How many times does the 29th day of a month occur in 400 consecutive years? [Question ID = 23799]**

1. 4497 times
2. 4400 times
3. 97 times
4. 449 times

**Correct Answer :-**

- 4497 times

**41) Pointing to a man in the photograph, a woman said " His brother's father is the only son of my grand father ". How is the woman related to the man in the photograph? [Question ID = 23800]**

1. Mother
2. Aunt
3. Sister
4. Daughter

**Correct Answer :-**

- Sister

**42) The time on the watch is quarter to three. If the time minutes hand points to North-East. In which direction does the Hours hand point? [Question ID = 23801]**

1. South – West
2. South -East
3. North – West
4. North – East

**Correct Answer :-**

- South – West

**43) A watch reads 4.30. If the minutes hand Points East, in what direction will be the hours hand point [Question ID = 23802]**

1. South -East
2. North – East
3. North
4. North west

**Correct Answer :-**

- North – East

**44) If the first day of the year (Other than leap year) was Friday then which was the last day of the year. [Question ID = 23803]**

1. Monday
2. Friday
3. Saturday
4. Sunday

**Correct Answer :-**

- Friday

**45) If March 6, 2005 , is Monday , what was the day of the week on March 6, 2004? [Question ID = 23804]**

1. Sunday
2. Saturday
3. Tuesday
4. Wednesday

**Correct Answer :-**

- Sunday

**46) A , B , C and E are sitting on bench. A is sitting next to D, D is not sitting with E who is on the left end of the bench. C is on the on the second position from the right. A is to the right of B and E. A and C are sitting together in which position A is sitting**

**[Question ID = 23805]**

1. Between B and D
2. Between B and C
3. Between E and D
4. Between C and E

**Correct Answer :-**

- Between B and C

**47) How many years have 29 days in February from 2001 to 2100 [Question ID = 23806]**

1. 26
2. 25
3. 23
4. 24

**Correct Answer :-**

- 24

48) How many 3's are there in the following sequence which are neither preceded by 6 nor followed by 9

9 3 6 6 3 9 5 3 7 8 9 1 6 3 9 6 3 9

[Question ID = 23807]

1. One
2. Two
3. Three
4. Four

**Correct Answer :-**

- Two

49) A, P, X, S and Z are sitting in a row. S is in the center. A and P are at the ends. X is sitting to the left of A. Who is to the right of P, [Question ID = 23808]

1. A
2. Z
3. S
4. X

**Correct Answer :-**

- Z

50) March 1st is Wednesday. Which month of the same year starts with the same day? [Question ID = 23809]

1. December
2. October
3. November
4. January

**Correct Answer :-**

- November

Topic:- B.Sc\_Communicative\_English\_Set2

1) Choose the correct antonym for the word ' Profane' [Question ID = 13237]

1. Fearful
2. Disrespectful
3. Bold
4. Religious

**Correct Answer :-**

- Religious

2) Choose the correct antonym for the word 'Indolence' [Question ID = 13238]

1. Laziness
2. Lethargy
3. Simplicity
4. Liveliness

**Correct Answer :-**

- Liveliness

**3) Choose the correct antonym for the word 'Devout' [Question ID = 13239]**

1. Secular
2. Sinful
3. Innovated
4. Indifferent

**Correct Answer :-**

- Indifferent

**4) Choose the correct antonym for the word 'Obstinate' [Question ID = 13240]**

1. Stubborn
2. Determined
3. Obedient
4. Adamant

**Correct Answer :-**

- Obedient

**5) Choose the correct antonym for the word 'Prudent' [Question ID = 13241]**

1. Irresponsible
2. Sensible
3. Practical
4. Discreet

**Correct Answer :-**

- Irresponsible

**6) Choose the correct synonym for the word underlined in the sentence: The speaker used his experiences to bolster his philosophy.**

**[Question ID = 13242]**

1. discourage
2. undermine
3. reject
4. encourage

**Correct Answer :-**

- encourage

---

7) Choose the correct synonym for the word underlined in the sentence: He is utterly destitute.

[Question ID = 13243]

1. arrogant
2. polite
3. rich
4. penniless

---

**Correct Answer :-**

- penniless

8) Choose the correct synonym for the word underlined in the sentence: His composition was a succinct history of the school.

[Question ID = 13244]

1. uninteresting
2. rambling
3. poor
4. concise

**Correct Answer :-**

- concise

---

9) Choose the correct synonym for the word underlined in the sentence: "It's none of your concern" he retorted

[Question ID = 13245]

1. rejoined
2. attacked
3. blessed
4. appreciated

---

**Correct Answer :-**

- attacked
-

**10) Choose the correct synonym for the word underlined in the sentence: He exaggerated the truth to win the heart of his Boss**

**[Question ID = 13246]**

1. unobtrusive
2. blown up
3. understated
4. modest

**Correct Answer :-**

- blown up

**11) Choose the correct one word substitute for the phrase 'a man who hates women' [Question ID = 13247]**

1. Misogynist
2. Misanthropist
3. Pyromaniac
4. Hypochondriac

**Correct Answer :-**

- Misogynist

**12) Choose the correct one word substitute for the phrase 'a person who speaks less' [Question ID = 13248]**

1. Reticent
2. Metropolitan
3. Sinecure
4. Fastidious

**Correct Answer :-**

- Reticent

**13) Choose the correct one word substitute for the phrase 'a drug or other substance that induces sleep' [Question ID = 13249]**

1. Insolvent
2. Cosmopolite
3. Introvert
4. Soporific

**Correct Answer :-**

- Soporific

**14) Identify the meanings given in the options for the confusables underlined in the sentences given: The abhorrent individual was spurned by his fellow citizens because of his aberrant behavior.**

**[Question ID = 13250]**

1. detestable, deviant
2. unethical, devoted
3. normal, desirable
4. attractive, aversion

**Correct Answer :-**

- detestable, deviant

**15) Identify the meanings given in the options for the confusables underlined in the sentences given: After we have the jeweler appraise the diamond, we will apprise you of its value.**

**[Question ID = 13251]**

1. devalue, abhor
2. assess, update
3. demonitise, demonstarte
4. deprive, explain

**Correct Answer :-**

- assess, update

**16) Identify the meanings given in the options for the confusables given: Aisle and Isle [Question ID = 13252]**

1. to make indirect reference to , to avoid
2. space between two planets and sun
3. space between two rows and island
4. space between two animals in the zoo and the road

**Correct Answer :-**

- space between two rows and island

**17) Choose the meaning of the underlined phrasal verb from the given options: We chose up to play the game.**

**[Question ID = 13253]**

1. to form a team
2. to break
3. to nurture
4. to attack



**Correct Answer :-**

- to form a team

---

**18) Choose the right meaning of the idiomatic expression 'to play second fiddle' [Question ID = 13254]**

1. To be happy, cheerful and healthy
2. To be in a lower position or rank than someone else
3. To support the role and view of another person
4. To do back seat driving

**Correct Answer :-**

- To be in a lower position or rank than someone else

**19) Identify the tense form in the sentence given: They play basketball every Sunday.**

**[Question ID = 13255]**

1. simple past
2. simple present
3. present perfect
4. past perfect

**Correct Answer :-**

- simple present

---

**20) Identify the tense form in the sentence given: They had written the exams well before they went for industrial tour**

**[Question ID = 13256]**

1. simple past
2. simple present
3. present perfect
4. past perfect

**Correct Answer :-**

- past perfect

---

**21) Complete the sentence with correct prepositions. It is a large bullet made \_\_\_\_\_ hard plastic that is intended \_\_\_\_\_ injure. [Question ID = 13257]**

1. of, to
2. in, to

3. with, from
4. in, by

**Correct Answer :-**

- of, to

**22) Complete the sentence with correct prepositions: When you arrive \_\_\_\_\_ your destination, you get \_\_\_\_\_ the bus. [Question ID = 13258]**

1. at, off
2. to, into
3. from, to
4. on, for

**Correct Answer :-**

- at, off

**23) Complete the sentence with correct prepositions. Are you the new student \_\_\_\_\_ Portugal? [Question ID = 13259]**

1. from
2. for
3. at
4. with

**Correct Answer :-**

- from

**24) Complete the sentence with correct prepositions. We have been working \_\_\_\_\_ the last six months. [Question ID = 13260]**

1. since
2. until
3. for
4. from

**Correct Answer :-**

- for

**25) Complete the sentence with correct prepositions. You can see the reality \_\_\_\_\_ the naked eye. [Question ID = 13261]**

1. with
2. for
3. from
4. by

**Correct Answer :-**

- with

**26)**

**Identify the sentence in which the subject is in agreement with the verb: Sugar and flour \_\_\_\_\_ needed for the recipe.**

**[Question ID = 13262]**

1. Sugar and flour is needed for the recipe
2. Sugar and flour was needed for the recipe
3. Sugar and flour will be needed for the recipe
4. Sugar and flour are needed for the recipe

**Correct Answer :-**

- Sugar and flour are needed for the recipe

**27) Identify the sentence in which the subject is in agreement with the verb: Neither my dad nor my brothers \_\_\_\_\_ how to ski. [Question ID = 13263]**

1. Neither my dad nor my brothers know how to ski
2. Neither my dad nor my brothers knowing how to ski
3. Neither my dad nor my brothers known how to ski
4. Neither my dad nor my brothers knows how to ski

**Correct Answer :-**

- Neither my dad nor my brothers know how to ski

**28) Identify the sentence in which the subject is in agreement with the verb: The creator and producer \_\_\_\_\_ arriving soon [Question ID = 13264]**

1. The creator and producer have been arriving soon
2. The creator and producer are arriving soon
3. The creator and producer will arriving soon
4. The creator and producer is arriving soon

**Correct Answer :-**

- The creator and producer is arriving soon

**29) Identify the sentence in which the subject is in agreement with the verb: Each of our staff members \_\_\_\_\_ to fill in an evaluation form. [Question ID = 13265]**

1. Each of our staff members have to fill in an evaluation form
2. Each of our staff members has to fill in an evaluation form
3. Each of our staff members were to fill in an evaluation form
4. Each of our staff members will has to fill in an evaluation form

**Correct Answer :-**

- Each of our staff members has to fill in an evaluation form

**30) Identify the sentence in which the subject is in agreement with the verb. None of us \_\_\_\_\_ to admit to being behind on filing. [Question ID = 13266]**

1. None of us want to admit to being behind on filing

2. None of us have to admit to being behind on filing
3. None of us wants to admit to being behind on filing
4. None of us have wanted to admit to being behind on filing

**Correct Answer :-**

- None of us wants to admit to being behind on filing

**31) Identify the suitable option for changing the sentence from active to passive: Harry ate six shrimp at dinner. (active) [Question ID = 13267]**

1. At dinner, six shrimp were eaten by Harry
2. At dinner, Harry ate six shrimp
3. Harry ate six shrimp at dinner
4. Harry has eaten six shrimp at dinner

**Correct Answer :-**

- At dinner, six shrimp were eaten by Harry

**32) Identify the suitable option for changing the sentence from passive to active: The entire stretch of highway was paved by the crew. (passive) [Question ID = 13268]**

1. The entire stretch was paved by the crew on the highway
2. On the highway, the entire stretch was paved by the crew
3. The crew paved the entire stretch of highway
4. The crew had paved the entire stretch of highway

**Correct Answer :-**

- The crew paved the entire stretch of highway

**33) Identify the suitable option for changing the sentence from passive to active: A novel has been written by her (passive) [Question ID = 13269]**

1. She has written a novel
2. She had written a novel
3. She have written a novel
4. She was written a novel

**Correct Answer :-**

- She has written a novel

**34) Identify the suitable option for changing the sentence from active to passive: They made her repeat the whole story. (passive) [Question ID = 13270]**

1. She repeat the whole story to them
2. She repeated the whole story to them
3. They repeat the whole story to her
4. She was made to repeat the whole story

**Correct Answer :-**

- She was made to repeat the whole story

**35)**

**Identify the suitable option for changing the sentence from active to passive: Sachin Tendulkar played a test match at Wankhede stadium.(active) [Question ID = 13271]**

1. A test match played at Wankhede stadium was SachinTendulkar
2. A test match was played by SachinTendulkar at Wankhede stadium
3. A test match SachinTendulkar played at Wankhede stadium
4. A test match SachinTendulkar was played at Wankhede stadium

**Correct Answer :-**

- A test match was played by SachinTendulkar at Wankhede stadium

**36) Choose the correct form of sentence from the options given [Question ID = 13272]**

1. He is suffering fever
2. He is suffering from fever
3. He is suffering of fever
4. He is suffering with fever

**Correct Answer :-**

- He is suffering from fever

**37) Choose the correct form of sentence from the options given [Question ID = 13273]**

1. I have a strong headache
2. I have a heavy headache
3. I have a bad headache
4. I have a huge headache

**Correct Answer :-**

- I have a bad headache

**38) Choose the correct form of sentence from the options given [Question ID = 13274]**

1. Being taught in a small group is preferable than being in a large noisy classroom
2. Being taught in a small group is preferable from being in a large noisy classroom
3. Being taught in a small group is preferable to being in a large noisy classroom
4. Being taught in a small group is preferable of being in a large noisy classroom

**Correct Answer :-**

- Being taught in a small group is preferable to being in a large noisy classroom

**39) Choose the correct form of sentence from the options given [Question ID = 13275]**

1. Sending young people to prison is a enormous mistake
2. Sending young people to prison is an enormous mistake
3. Sending young people to prison is the enormous mistake
4. Sending young people to prison is enormous mistake

**Correct Answer :-**

- Sending young people to prison is an enormous mistake

**40) Choose the correct form of sentence from the options given [Question ID = 13276]**

1. Who is knocking the door?
2. Who is knocking by the door?
3. Who is knocking at the door?
4. Who is knocking door?

**Correct Answer :-**

- Who is knocking at the door?

**41) Choose the correct spelling [Question ID = 13277]**

1. Disobidient
2. Disobedient
3. Desobidient
4. Disobedent

**Correct Answer :-**

- Disobedient

**42) Choose the correct spelling [Question ID = 13278]**

1. disciplinarian
2. disciplinarien
3. disciplinearien
4. desciplinarien

**Correct Answer :-**

- disciplinarian

**43) Choose the correct spelling [Question ID = 13279]**

1. Honorarium
2. Honorearium
3. Honorium
4. Honourium

**Correct Answer :-**

- Honorarium

**44) Choose the correct spelling [Question ID = 13280]**

1. blasphemous
2. blasphemeous
3. blasphemoeus
4. blasfemeous

**Correct Answer :-**

- blasphemous

**45) Choose the correct spelling [Question ID = 13281]**

1. Repurcursion
2. Repercussion

3. Repercusion
4. Repercution

**Correct Answer :-**

- Repercussion

**46) Read the following passage and answer the question by choosing the correct answer from the options given below:**

**Among the chief sources of education available to Tagore was a quiet garden adjoining his family house. Here, he used to spend most of his time, absorbing the peace and beauty of Nature. It was through this early contact with Nature that he acquired the serenity of mood which made him distinguished throughout his life. It was in this garden that he came to understand the principle of harmony that was at work throughout the Universe. At the same time, he formed the habit of observing and reflecting on things.**

**QUESTION: How did Tagore spend most of his time in the garden adjoining his family house?**

**[Question ID = 13287]**

1. Reading literary books
2. Plucking flowers and enjoying their fragrance
3. Enjoying natural peace and beauty
4. Sleeping in natural air and thinking of poetry

**Correct Answer :-**

- Enjoying natural peace and beauty

**47) Read the following passage and answer the question by choosing the correct answer from the options given below:**

**Among the chief sources of education available to Tagore was a quiet garden adjoining his family house. Here, he used to spend most of his time, absorbing the peace and beauty of Nature. It was through this early contact with Nature that he acquired the serenity of mood which made him distinguished throughout his life. It was in this garden that he came to understand the principle of harmony that was at work throughout the Universe. At the same time, he formed the habit of observing and reflecting on things.**

**QUESTION: How did the garden near Tagore's house serve him?**

**[Question ID = 13288]**

1. As a means of declaration
2. As a means of education
3. As a source of entertainment
4. As a good passing time to lead a normal life

**Correct Answer :-**

- As a means of education

---

**48) Read the following passage and answer the question by choosing the correct answer from the options given below:**

**Among the chief sources of education available to Tagore was a quiet garden adjoining his family house. Here, he used to spend most of his time, absorbing the peace and beauty of Nature. It was through this early contact with Nature that he acquired the serenity of mood which made him distinguished throughout his life. It was in this garden that he came to understand the principle of harmony that was at work throughout the Universe. At the same time, he formed the habit of observing and reflecting on things.**

**QUESTION: By spending his time in the garden, Tagore developed the habit of \_\_\_\_\_**

**[Question ID = 13289]**

1. Judgement
2. Observing things carefully
3. Taking life trouble-free
4. Writing stories and relaxing

---

**Correct Answer :-**

- Observing things carefully

---

**49) Read the following passage and answer the question by choosing the correct answer from the options given below:**

**Among the chief sources of education available to Tagore was a quiet garden adjoining his family house. Here, he used to spend most of his time, absorbing the peace and beauty of Nature. It was through this early contact with Nature that he acquired the serenity of mood which made him distinguished throughout his life. It was in this garden that he came to understand the principle of harmony that was at work throughout the Universe. At the same time, he formed the habit of observing and reflecting on things.**

**QUESTION: What made Tagore acquire the serenity of mood?**

**[Question ID = 13290]**

1. His early contact with Nature
2. Childhood education
3. Dislike for beautiful panorama
4. Aversion for Nature

---

**Correct Answer :-**

- His early contact with Nature



**50) Read the following passage and answer the question by choosing the correct answer from the options given below:**

**Among the chief sources of education available to Tagore was a quiet garden adjoining his family house. Here, he used to spend most of his time, absorbing the peace and beauty of Nature. It was through this early contact with Nature that he acquired the serenity of mood which made him distinguished throughout his life. It was in this garden that he came to understand the principle of harmony that was at work throughout the Universe. At the same time, he formed the habit of observing and reflecting on things.**

**QUESTION: How did Tagore become very illustrious?**

**[Question ID = 13291]**

1. Because of his wealth
2. Because of his surroundings
3. Because of his knowledge about music
4. Because of his tranquility of mind

---

**Correct Answer :-**

- Because of his tranquility of mind