



"Where working hard is a habit"

# IIT ASHRAM

JEE MAIN || JEE ADVANCED || MEDICAL || FOUNDATION

ALKAPURI:- UG-1 & 2, Concorde Complex, Above OBC Bank, R.C. Dutt Road, Alkapuri, Baroda. Ph. 6625979, 9033063027

## UDAAN (2020) ANSWER KEY AND SOLUTION CLASS - 8

Mental Ability		Mathematics		Physics & Chemistry		Biology	
Q. No.	Ans	Q. No.	Ans	Q. No.	Ans	Q. No.	Ans
1	C	1	A	1	C	1	D
2	A	2	A	2	B	2	A
3	D	3	C	3	C	3	B
4	D	4	C	4	C	4	D
5	B	5	B	5	D	5	D
6	C	6	A	6	D	6	A
7	C	7	C	7	D	7	B
8	C	8	C	8	D	8	C
9	D	9	B	9	C	9	A
10	A	10	B	10	B	10	D
11	C	11	A	11	C	11	B
12	B	12	A	12	A	12	C
				13	A		
				14	A		
				15	D		
				16	B		
				17	A		
				18	B		
				19	A		
				20	A		
				21	B		
				22	C		
				23	C		
				24	B		

## PART - I

### MENTAL ABILITY

1. (C)



2. (A) More than 5

3. (D) S

	Spade	Club	Diamond	Heart
P	Ace	King	Queen	-
Q	Jack	Ace	King	-
R	King	Queen	Jack	-
S	Queen	Jack	Ace	-

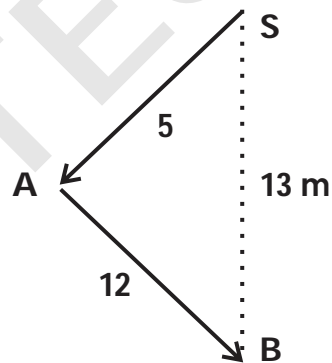
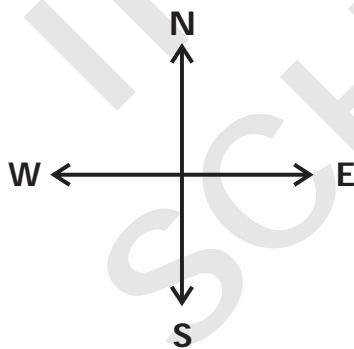
4. (D) 625

$$12 + 13 = 25$$

$$\therefore 25^2 = 625$$

5. (B)

6. (C)



7. (C)

Birth, Study, Degree, Marriage, Death.

1, 3, 4, 5, 2

8. (C)

$$14 - 99 \div 33 + 11 \times 5$$

$$14 - 3 + 55 = 11 + 55 = 66$$

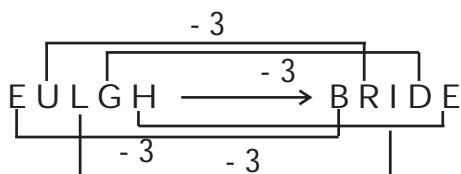
9. (D) No students b/w Ajay and Amit

10. (A) mu

Since it is common between both of phrases.

11. (C) Engine

12. (B)



## PART - II MATHEMATICS

1. (a)

$$\begin{aligned} \therefore 33 + x &= 115 \quad [\text{Ext. angle prop.}] \\ x &= 115 - 33 \end{aligned}$$

$$\boxed{x = 82^\circ}$$

$$\therefore x = y + 36 \quad [\text{Ext. angle prop.}]$$

$$82 = y + 36$$

$$y = 82 - 36$$

$$\boxed{y = 46^\circ}$$

2. (a)

$$\left| \frac{-3}{5} \times \frac{2}{7} \right| = \left| \frac{-3}{5} \right| \times \left| \frac{2}{7} \right|$$

$$\left| \frac{-6}{35} \right| = \frac{3}{5} \times \frac{2}{7}$$

$$\frac{6}{35} = \frac{6}{35}$$

3. (c)

$$a = 2012, \quad b = 2011, \quad c = 2010$$

$$\therefore a^2 + b^2 + c^2 - ab - bc - ca$$

$$\frac{1}{2} |2a^2 + 2b^2 + 2c^2 - 2ab - 2bc - 2ca|$$

$$\frac{1}{2} |(a-b)^2 + (b-c)^2 + (c-a)^2|$$

$$\frac{1}{2} |(2012-2011)^2 + (2011-2010)^2 + (2010-2012)^2|$$

$$\frac{1}{2} |1 + 1 + 4| = \frac{1}{2} \times 6 = 3$$

4. (c)

$$\sqrt{43 + \sqrt{32 + \sqrt{18 - \sqrt{4}}}}$$

$$\sqrt{43 + \sqrt{32 + \sqrt{16}}}$$

$$\sqrt{43 + \sqrt{36}} = \sqrt{43 + 6} = \sqrt{49} = 7$$

5. (b)

$$\text{Let C.P} = 100$$

$$\text{M.P} = 120$$

$$\therefore \text{dis.} = 10\%$$

$$\text{So, S.P.} = 108$$

$$\text{Gain (\%)} = \frac{\text{S.P.C.P}}{\text{C.P}} \times 100 = \frac{108 - 100}{100} \times 100 = 8\%$$

6. (a)

$$\text{Area of ABCDE} = \text{Ar (ABF)} + \text{Ar (BFHC)} + \\ \text{Ar (CHD)} + \text{Ar (AED)}$$

$$\left(\frac{1}{2} \times 3 \times 2\right) + \left[\frac{1}{2} (2+3) \times 3\right] + \left(\frac{1}{2} \times 2 \times 3\right) +$$

$$\left(\frac{1}{2} \times 8 \times 2.5\right)$$

$$= 3 + 7.5 + 3 + 10$$

$$= 23.5 \text{ cm}^2$$

7. (c)

$$\sqrt[3]{\sqrt[4]{x^2}} = x^k$$

$$x^{\frac{1}{6}} = x^k$$

$$\boxed{K = \frac{1}{6}}$$

8. (c)  $\frac{1}{3}$ 

$$\frac{(x-y)^3 + (y-z)^3 + (z-x)^3}{9(x-y)(y-z)(z-x)}$$

$$\therefore x - y + y - z + z - x = 0$$

$$\text{also, If } a + b + c = 0$$

$$\therefore a^3 + b^3 + c^3 = 3abc$$

$$\text{So, } = \frac{3(x-y)(y-z)(z-x)}{9(x-y)(y-z)(z-x)} = \frac{1}{3}$$

9. (b)  $\frac{11}{12}$ 

$$\frac{1}{1} - \frac{1}{2} + \frac{1}{2} - \frac{1}{3} + \frac{1}{3} - \frac{1}{4} + \frac{1}{4} - \frac{1}{5} + \dots + \frac{1}{11} - \frac{1}{12} = \frac{1}{1} - \frac{1}{12} = \frac{11}{12}$$

10. (b) 121.12 cm<sup>2</sup>

$$\because OA = \frac{1}{3} OP \quad \therefore OP = 12$$

as Radius (OB) = 4 cm

$$\begin{aligned} \text{Shaded region} &= \frac{3}{4} \pi R^2 + L \times b - \frac{1}{4} \pi r^2 = \frac{\pi R^2}{2} + l \times b = \frac{3.14 \times 16}{2} + 12 \times 8 \\ &= 3.14 \times 8 + 12 \times 8 = 8(12 + 3.14) = 8 \times 15.14 = 121.12 \text{ cm}^2 \end{aligned}$$

11. (a) 0.50

$$8 \times 4^x = \frac{1}{512}$$

$$2^{2x} = \frac{1}{8 \times 512}$$

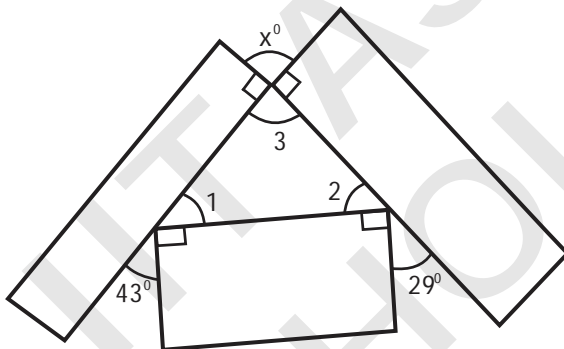
$$2^{2x} = 2^{-3} \times 2^{-9}$$

$$2^{2x} = 2^{-12}$$

$$\boxed{x = -6}$$

$$\text{So, } \frac{-3}{x} = \frac{-3}{6} = \frac{1}{2} = 0.50$$

12. (a)



$$\therefore \angle 1 + 90^\circ + 43 = 180^\circ \Rightarrow \angle 1 + 180^\circ - 133^\circ \Rightarrow \boxed{\angle 1 = 47}$$

$$\therefore \angle 2 + 90^\circ + 29 = 180^\circ \Rightarrow \angle 2 = 180 - 119 \Rightarrow \boxed{\angle 2 = 61}$$

$$\therefore \angle 1 + \angle 2 + \angle 3 = 180^\circ$$

$$47 + 61 + \angle 3 = 180^\circ$$

$$\angle 3 = 180 - 108$$

$$\boxed{\angle 3 = 72^\circ}$$

$$\text{Now, } \angle 3 = 90^\circ + 90^\circ + x = 360^\circ \quad (\text{complete angle})$$

$$72 + 180 + x = 360^\circ$$

$$x = 360 - 252$$

$$\boxed{x = 108}$$

**PART - III**  
**PHYSICS/CHEMISTRY**

1. (c)

2. (b)

Boat moves backward due to action & reaction forces.

3. (c)

4. (c)

Due to Newton's third law of action and reaction option **C** is correct.

5. (d)

6. (d)

Option 2 is correct as friction force on front wheel is backwards and friction on rear wheel is in forward direction.

7. (d)

8. (d)

All are unit of pressure.

9. (c)

10. (b)

Image formed by plane mirror is virtual, same size and behind the mirror

11. (c)

12. (a)

13. (a)

14. (a)

15. (d)

16. (b)

17. (a)

18. (b)

19. (a)

20. (a)

21. (b)

22. (c)

23. (c)

24. (b)

**PART - IV  
BIOLOGY**

1. (D) All the above reason are performed by storage of fat in the body.
2. (A) Spinach - Leaves
3. (B) Seed dispersal carried out by wind
4. (D) All of these
5. (D) During germination of seed the following all reason should be possible.
6. (A) When we touch any object so we are giving stimulus to the object and the object us respond.
7. (B) Both statements 1 and 2 are true but statement 2 is not the correct explanation of statement 1. because body of bird and their hollow and light bone are not correct explanation of each other.
8. (C) From the Omasum the semi-digested food is moved back to mouth.
9. (A) Pulmonary artery performs special function to carries carbon dioxide-rich blood and pulmonary vein carries oxygen-rich blood.
10. (D)
11. (B)
12. (C)