

## **TG ICET 2025**

### **SECTION – A: ANALYTICAL ABILITY**

#### **1. Data Sufficiency**

**Note:** In questions numbered from 1 to 20, a question is followed by data in the form of two statements labelled as (I) and (II). You must decide whether the data given in the statements are sufficient to answer the questions. Using the data make an appropriate choice from (1) to (4) as per the following guidelines:

- (a) If the statement (I) alone is sufficient to answer the question, but (II) can't give the answer, mark your choice **(1)**.
  - (b) If the statement (II) alone is sufficient to answer the question, but (I) can't give the answer, mark your choice **(2)**.
  - (c) If both the statements (I) and (II) are sufficient to answer the question but neither statement alone is sufficient, mark your choice **(3)**.
  - (d) If both the statements (I) and (II) together are not sufficient to answer the question and additional data are required, mark your choice **(4)**.
- 

#### **Question 1**

**Marks:** +1 / -0

#### **Question:**

What is the area of the circle?

#### **Statements:**

- (I) The perimeter of the circle is  $54\pi$  cm.
- (II) The area of the triangle inscribed in the circle is 365 sq. cm.

#### **Options:**

1. Statement (I) alone is sufficient.
2. Statement (II) alone is sufficient.
3. Both statements (I) and (II) together are sufficient.

4. Both statements together are not sufficient.

**Correct Answer: Option (1)**

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**Question 2**

**Marks:** +1 / -0

**Question:**

Find the digit in the units place of the natural number  $n$ , where  $62 \leq n \leq 83$ .

**Statements:**

- (I)  $n$  is a multiple of 12.  
(II)  $n$  gives a remainder of 2 when divided by 7.

**Options:**

1. Statement (I) alone is sufficient.
2. Statement (II) alone is sufficient.
3. Both statements (I) and (II) together are sufficient.
4. Both statements together are not sufficient.

**Correct Answer: Option (3)**

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**Question 3**

**Marks:** +1 / -0

**Question:**

What is the sum of marks obtained in Physics and Chemistry by Ram?

**Statements:**

- (I) Ram got 8 marks more in Physics than in Chemistry.  
(II) Ram got an average of 72 marks in Physics and Chemistry.

**Options:**

1. Statement (I) alone is sufficient.
2. Statement (II) alone is sufficient.
3. Both statements (I) and (II) together are sufficient.
4. Both statements together are not sufficient.

**Correct Answer: Option (2)**

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**Question 4**

**Marks:** +1 / -0

**Question:**

What is the cost of erecting a fence around a rectangular field?

**Statements:**

- (I) The cost of fencing is ₹150 per meter.  
(II) The area of the field is 20,000 sq. meters.

**Options:**

1. Statement (I) alone is sufficient.
2. Statement (II) alone is sufficient.
3. Both statements (I) and (II) together are sufficient.
4. Both statements together are not sufficient.

**Correct Answer: Option (4)**

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**Question 5**

**Question:**

What is the simple interest earned by the depositor on a fixed deposit?

**Statements:**

- (I) The deposit is kept for one year.  
(II) The amount deposited is ₹10,000.

**Options:**

1. Statement (I) alone is sufficient.
2. Statement (II) alone is sufficient.
3. Both statements (I) and (II) together are sufficient.
4. Both statements together are not sufficient.

**Correct Answer: Option (4)**

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**Question 6**

**Question:**

Are the roots of the equation  $4ax^2 + 5bx + 6c = 0$  real numbers?

**Statements:**

- (I)  $a:b:c = 2:3:4$   
(II)  $a + b + c = 27$

**Options:**

1. Statement (I) alone is sufficient.
2. Statement (II) alone is sufficient.
3. Both statements (I) and (II) together are sufficient.
4. Both statements together are not sufficient.

**Correct Answer: Option (1)**

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**Question 7**

**Question:**

What is the volume of the right circular cone?

**Statements:**

- (I) The semi-vertical angle of the cone is  $30^\circ$ .
- (II) The slant height of the cone is 17cm.

**Options:**

- 1. Statement (I) alone is sufficient.
- 2. Statement (II) alone is sufficient.
- 3. Both statements (I) and (II) together are sufficient.
- 4. Both statements together are not sufficient.

**Correct Answer: Option (3)**

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**Question 8**

**Question:**

Find the average of 10 numbers written in ascending order.

**Statements:**

- (I) The average of the first four and the last four numbers together is 20.
- (II) The sum of the middle two numbers is 15.

**Options:**

- 1. Statement (I) alone is sufficient.
- 2. Statement (II) alone is sufficient.
- 3. Both statements (I) and (II) together are sufficient.
- 4. Both statements together are not sufficient.

**Correct Answer: Option (3)**

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**Question 9**

**Question:**

What is the mode of the frequency distribution?

**Statements:**

- (I) The total number of observations is 100.
- (II) The median of the distribution is 68.43.

**Options:**

- 1. Statement (I) alone is sufficient.
- 2. Statement (II) alone is sufficient.
- 3. Both statements (I) and (II) together are sufficient.
- 4. Both statements together are not sufficient.

**Correct Answer: Option (4)**

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**Question 10**

**Question:**

What is the number of persons between two persons *A* and *B* in a row of 29 persons?

**Statements:**

- (I) *A* is the 24<sup>th</sup> person from the beginning.
- (II) *B* is the 19<sup>th</sup> person from the end.

**Options:**

- 1. Statement (I) alone is sufficient.
- 2. Statement (II) alone is sufficient.
- 3. Both statements (I) and (II) together are sufficient.
- 4. Both statements together are not sufficient.

**Correct Answer: Option (3)**

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**Question 11****Question:**

If an empty tank is filled by two pipes *A* and *B*, what is the time taken to fill the tank by pipe *A* alone?

**Statements:**

- (I) Pipe *A* fills the tank 5 hours faster than pipe *B*.
- (II) Pipe *B* fills  $\frac{1}{15}$  of the tank in 1 hour.

**Options:**

- 1. Statement (I) alone is sufficient.
- 2. Statement (II) alone is sufficient.
- 3. Both statements (I) and (II) together are sufficient.
- 4. Both statements together are not sufficient.

**Correct Answer: Option (3)**

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**Question 12****Marks:** +1 / -0**Question:**

For positive integers *a* and *b*, is  $\sqrt{a^2 + b^2}$  an integer?

**Statements:**

- (I)  $a^2 + b^2$  is an integer.
- (II)  $a^2 - 24b^2 = 0$

**Options:**

- A. Statement (I) alone is sufficient.
- B. Statement (II) alone is sufficient.
- C. Both statements (I) and (II) together are sufficient.

D. Both statements together are not sufficient.

**Correct Answer: Option (2)**

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**Question 13**

**Marks:** +1 / -0

**Question:**

In how many days can 8 men and 8 women together complete the work?

**Statements:**

- (I) 4 men or 6 women can complete the work in 10 days.
- (II) 4 men and 6 women together can complete the work in 5 days.

**Options:**

- A. Statement (I) alone is sufficient.
- B. Statement (II) alone is sufficient.
- C. Both statements (I) and (II) together are sufficient.
- D. Both statements together are not sufficient.

**Correct Answer: Option (1)**

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**Question 14**

**Marks:** +1 / -0

**Question:**

Is  $na$  natural number?

**Statements:**

(I)

$$n = \left( \frac{3 + \sqrt{5}}{\sqrt{2} + \sqrt{3 + \sqrt{5}}} + \frac{3 - \sqrt{5}}{\sqrt{2} - \sqrt{3 - \sqrt{5}}} \right)^2$$

(II)  $n^2$  is a positive integer.

**Options:**

- A. Statement (I) alone is sufficient.
- B. Statement (II) alone is sufficient.
- C. Both statements (I) and (II) together are sufficient.
- D. Both statements together are not sufficient.

**Correct Answer: Option (1)**

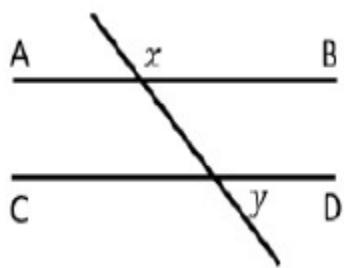
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**Question 15**

**Marks:** +1 / -0

**Question:**

What is the measure of angle  $x$  in the adjacent figure?



**Statements:**

- (I)  $y = 80^\circ$
- (II) The straight lines  $AB$  and  $CD$  are parallel.

**Options:**

- A. Statement (I) alone is sufficient.
- B. Statement (II) alone is sufficient.
- C. Both statements (I) and (II) together are sufficient.
- D. Both statements together are not sufficient.

**Correct Answer: Option (3)**

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**Question 16**

**Marks:** +1 / -0

**Question**

How many brothers does Githa have?

**Statements**

- (I) Ramu has two sisters and no brothers.
- (II) Rita, one of Ramu's sister, has only one sister Githa.

**Options:**

- A. Statement (I) alone is sufficient.
- B. Statement (II) alone is sufficient.
- C. Both statements (I) and (II) together are sufficient.
- D. Both statements together are not sufficient.

**Correct Answer: Option (3)**

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**Question 17**

**Question:** In a group of 30 students, 18 are enrolled in English and 16 are enrolled in Mathematics. How many are enrolled in both English and Mathematics?

**Statements:**

- (I) 20 students are enrolled in exactly one of these two subjects.
- (II) 3 students are not enrolled in either of these subjects.

**Options**

- 1. Statement (I) alone is sufficient.
- 2. Statement (II) alone is sufficient.
- 3. Either Statement (I) or Statement (II) alone is sufficient.
- 4. Both statements together are not sufficient.

**Correct Answer: Option (1)**

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**Question 18**

**Question:**

Five friends  $A, B, C, D$  and  $E$  stand in a line for a photograph in some order. Who is the middle one?

**Statements:**

- (I)  $B$  is fourth from the right end and is immediately to the left of  $C$ .
- (II)  $D$  is neither a neighbor of  $A$  nor of  $B$ .

**Options:**

- 1. Statement (I) alone is sufficient.
- 2. Statement (II) alone is sufficient.
- 3. Both statements (I) and (II) together are sufficient.
- 4. Both statements together are not sufficient.

**Correct Answer: Option (1)**

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**Question 19**

**Question:**

Is the positive integer  $a$  divisible by 35?

**Statements:**

- (I)  $a$  is divisible by 15.
- (II)  $a$  is divisible by 14.

**Options:**

- 1. Statement (I) alone is sufficient.
- 2. Statement (II) alone is sufficient.
- 3. Both statements (I) and (II) together are sufficient.
- 4. Both statements together are not sufficient.

**Correct Answer: Option (3)**

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**Question 20**

**Question:**

If the sentence “**They are fine**” is coded as “**Lit monk Zip**”, then which code word stands for “**fine**”?

**Statements:**

- (I) In the same code language, “**You are fine**” is coded as “**Zip monk Cat**”.
- (II) In the same code language, “**They are rich**” is coded as “**dog Lit zip**”.

**Options:**

- 1. Statement (I) alone is sufficient.
- 2. Statement (II) alone is sufficient.
- 3. Both statements (I) and (II) together are sufficient.
- 4. Both statements together are not sufficient.

**Correct Answer: Option (3)**

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## **SECTION – A: ANALYTICAL ABILITY**

### **2. Problem Solving**

#### **Sub-Section 2**

**Topic:** Series (Analogies: a : b :: c : d relationships)

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**Question 21**

**Marks:** +1 / -0

**Question:**

**RSab : STcd :: TUvw : -----**

**Options:**

- 1. VUxy
- 2. UVxy
- 3. VUxy
- 4. uVab

**Correct Answer:** Option (B)

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**Question 22**

**Marks:** +1 / -0

**Question:**

4DH : 9LP :: \_\_\_\_\_ : 14NR

**Options:**

- A. 9EI
- B. 9FK
- C. 9FJ
- D. 9PQ

**Correct Answer:** Option (C)

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**Question 23**

**Marks:** +1 / -0

**Question:**

U  $\otimes$  W : 21  $\otimes$  23 :: L  $\otimes$  M : \_\_\_\_\_

**Options:**

- A. 11  $\otimes$  12
- B. 13  $\otimes$  11
- C. 13  $\otimes$  12
- D. 12  $\otimes$  13

**Correct Answer:** Option (D)

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**Question 24**

**Marks:** +1 / -0

**Question:**

$$\frac{7}{6} : \frac{77}{42} :: \frac{143}{56} : ?$$

**Options:**

- A.  $\frac{26}{9}$
- B.  $\frac{247}{72}$
- C.  $\frac{221}{72}$
- D.  $\frac{221}{64}$

**Correct Answer:** Option (C)

---

**Question 25**

**Marks:** +1 / -0

**Question:**

ABC : ZYX :: DEF : \_\_\_\_\_

**Options:**

- A. UVW
- B. WVU
- C. VWU
- D. UWV

**Correct Answer:** Option (B)

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**Question 26**

**Marks:** +1 / -0

**Question:**

BEYOND : \_\_\_\_\_ :: WOULD : TLRIA

**Options:**

- A. YCWKLA
- B. YAUJMA
- C. YBVLKA
- D. YDXNPA

**Correct Answer:** Option (C)

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**Question 27**

**Marks:** +1 / -0

**Question:**

LAKE5 : PEOI8 :: \_\_\_\_\_ : QIEX7

**Options:**

- A. TEAM4
- B. TAME4
- C. MATE4
- D. MEAT4

**Correct Answer:** Option (D)

---

**Question 28**

**Marks:** +1 / -0

**Question:**

\_\_\_\_\_ : PEQT :: JUMP : NYQT

**Options:**

- A. AMPL
- B. ALMP
- C. LIMP
- D. LAMP

**Correct Answer:** Option (D)

---

**Question 29**

**Marks:** +1 / -0

**Question:**

(8)Z : (27)Y :: (64)B : \_\_\_\_\_

**Options:**

- A. 125A
- B. 125C
- C. 216A
- D. 125F

**Correct Answer:** Option (A)

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**Question 30**

**Marks:** +1 / -0

**Question:**

\_\_\_\_\_ : JUBA :: CRSY : APQW

**Options:**

- A. LWDC
- B. LXEB
- C. LYCD
- D. LZDA

**Correct Answer:** Option (A)

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## **SECTION – A: ANALYTICAL ABILITY**

### **2. Problem Solving**

#### **Sub-Section 3**

**Topic:** Series (Odd Things Out)

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**Question 31**

**Marks:** +1 / 0

**Question:**

$$\frac{21}{11}, \frac{31}{19}, \frac{43}{29}, \frac{57}{41}, \frac{73}{55}, \frac{91}{70}$$

**Options:**

- A.  $\frac{21}{11}$

- B.  $\frac{91}{70}$   
C.  $\frac{73}{55}$   
D.  $\frac{31}{19}$

**Correct Answer:** Option (B)

---

**Question 32**

**Marks:** +1 / 0

**Question:**

75, 57, 54, 64, 36, 87, 69, 93

**Options:**

- A. 54  
B. 36  
C. 93  
D. 64

**Correct Answer:** Option (D)

---

**Question 33**

**Marks:** +1 / 0

**Question:**

45, 75, 175, 245, 315, 605, 845

**Options:**

- A. 315  
B. 405  
C. 75  
D. 245

**Correct Answer:** Option (A)

---

**Question 34**

**Marks:** +1 / 0

**Question:**

83, 31, 29, 23, 17, 19, 39, 53

**Options:**

- A. 39  
B. 53  
C. 83  
D. 19

**Correct Answer:** Option (A)

---

**Question 35****Marks:** +1 / 0**Question:**

Mahanadi, Tapati, Sutlej, Chambal, Ghaghara, Jhelum, Indus, Aravalli

**Options:**

- A. Aravalli
- B. Ghaghara
- C. Chambal
- D. Tapati

**Correct Answer:** Option (A)

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**SECTION – A: ANALYTICAL ABILITY****1. Problem Solving**

Sub-Section 4

**Topic:** Series (Missing numbers in sequence or series)

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**Question 36 Marks: +1 / 0****Question:** E, J, Z, X, R, \_\_\_\_\_, D, X**Options:**

- A. M
- B. N
- C. O
- D. P

**Correct Answer:** Option (B)

---

**Question 37 Marks: +1 / 0****Question:** 2, 5, 10, 15, 50, 45, 250, \_\_\_\_\_**Options:**

- 1. 225
- 2. 135
- 3. 175
- 4. 315

**Correct Answer:** Option (2)

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**Question 38****Marks:** +1 / 0

**Question:**

ICETMGU, KAG\_\_OEW, MYIPQC\_\_, O\_\_KNSAA, QUM\_\_UYC, \_\_SOJWWE, UQ\_\_HYUG

**Options:**

1. S, X, W, M, S, Q
2. R, Y, W, L, S, Q
3. R, X, X, L, S, Q
4. S, X, W, L, R, Q

**Correct Answer:** Option (2)

---

**Question 39**

**Marks:** +1 / 0

**Question:**

67, 71, 73, \_\_\_\_\_, 83, 89, 97, 101

**Options:**

1. 81
2. 77
3. 79
4. 76

**Correct Answer:** Option (3)

---

**Question 40**

**Marks:** +1 / 0

**Question:**

55, 56, 59, 68, 95, 176, \_\_\_\_\_

**Options:**

1. 249
2. 337
3. 419
4. 521

**Correct Answer:** Option (3)

---

**Question 41**

**Marks:** +1 / -0

**Question:**

Find the missing number in the following sequence:

5, 6, 13, 12, 21, 24, 29, 48, \_\_\_\_\_

**Options:**

1. 64
2. 56
3. 43
4. 37

**Correct Answer:** Option (4)

---

**Question 42**

**Marks:** +1 / -0

**Question:**

Find the missing number in the following sequence:

123,78,112,87,101,96,\_\_\_\_,105

**Options:**

1. 90
2. 97
3. 103
4. 111

**Correct Answer:** Option (1)

---

**Question 43**

**Marks:** +1 / -0

**Question:**

Find the missing letters to complete the sequence of terms:

USTRUMP, \_\_RUMPUS, U\_\_PUSTR, PU\_\_TRUM, STR\_\_MPU, RUMP\_\_ST, MPUST\_\_U

**Options:**

1. T, M, S, U, U, R
2. U, S, M, T, U, R
3. T, S, U, M, U, R
4. U, M, S, T, U, R

**Correct Answer:** Option (1)

---

**Question 44**

**Marks:** +1 / -0

**Question:**

Find the missing number in the following sequence:

4,18,48,100,180,\_\_\_\_,448

**Options:**

1. 196
2. 326
3. 244
4. 294

**Correct Answer:** Option (4)

---

**Question 45**

**Marks:** +1 / 0

**Question:**

Find the missing number in the following sequence:

$$2, 3, \frac{9}{2}, \frac{27}{4}, \text{---}, \frac{243}{16}, \frac{729}{32}$$

**Options:**

1.  $\frac{54}{6}$
2.  $\frac{81}{6}$
3.  $\frac{45}{8}$
4.  $\frac{81}{8}$

**Correct Answer:** Option (4)

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**SECTION – A: ANALYTICAL ABILITY**

**2. Problem Solving**

Sub-Section 5

**B. Data Analysis**

**Question Numbers: 46 to 48**

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The following table depicts the trends of admissions in MBA in five colleges A to E during five years from 2020 to 2024. Based on this data, answer the questions from 46 to 48.

College	2020	2021	2022	2023	2024
A	140	135	150	140	160
B	180	170	190	210	200
C	120	100	110	125	140

D	200	210	205	220	230
E	150	145	160	155	170

---

**Question 46 Marks:** +1 / 0

**Question:** Which of the five colleges had the highest total admissions over 5 years?

**Options:** 1. B

2. E

3. D

4. A

**Correct Answer:** Option (3)

Would you like me to extract and format the remaining questions (47 and 48) based on this table?

---

**Question 47**

**Marks:** +1 / 0

**Question:**

Out of all admissions in the year **2024**, what is the **percentage of admissions in**

**College B?**

**Options:**

1. 20.12

2. 19.52

3. 23.32

4. 22.22

**Correct Answer:** Option (4)

---

**Question 48**

**Marks:** +1 / 0

**Question:**

Which college has witnessed the **highest growth percentage in admissions in 2024** when compared to **2020**?

**Options:**

1. B

2. C

3. D

4. E

**Correct Answer:** Option (2)

## SECTION – A: ANALYTICAL ABILITY

### Sub-Section 6

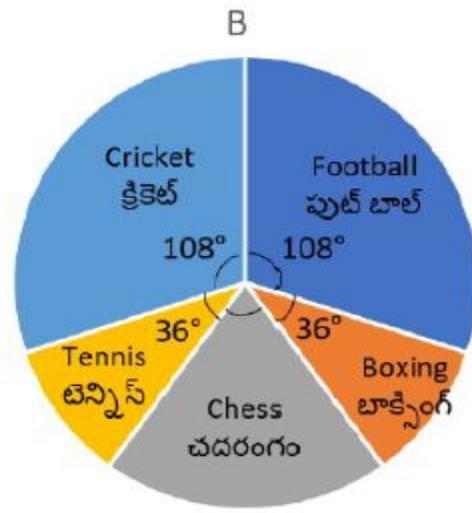
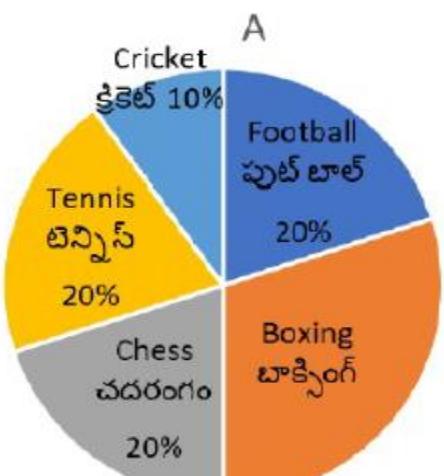
#### 2. Problem Solving

#### B. Data Analysis

#### Instructions for Questions 49 to 51

The following Pie-Charts depict the students who play different games in two colleges A and B. Based on this information, answer the questions from 49 to 51.

- Number of students in college A = 1000
- Number of students in college B = 1500



#### Question 49

Marks: +1 / 0

#### Question:

Find the total number of students who play football in both colleges A and B together.

#### Options:

1. 700
2. 650
3. 600
4. 680

**Correct Answer: Option (2)**

---

**Question 50****Marks:** +1 / 0**Question:**

Both the colleges put together, which is the game least played?

**Options:**

1. Tennis
2. Boxing
3. Cricket
4. Football

**Correct Answer:** Option (1)

---

**Question 51****Marks:** +1 / 0**Question:**

In college B, find the difference between the number of players of Football and Chess.

**Options:**

1. 175
2. 180
3. 150
4. 200

**Correct Answer:** Option (3)

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**SECTION – A: ANALYTICAL ABILITY****Sub-Section 7****2. Problem Solving****B. Data Analysis**

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**Questions (52 to 55)**

Let

$$U = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16\}$$

be the **universal set**.

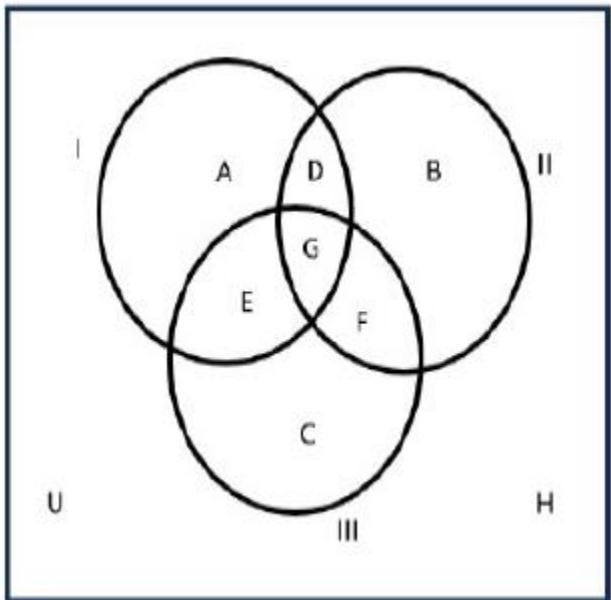
Given that:

$$I = \{1, 3, 5, 7, 9, 11, 13, 15\}$$

$$II = \{1, 4, 9, 16\}$$

$$III = \{2, 3, 5, 7, 11, 13\}$$

Based on this data, **answer the Questions from 52 to 55.**



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**Question 52**

**Marks:** +1 / 0

**Question:**

Empty regions in the Venn Diagram are?

**Options:**

1. **C, G**
2. **G, F**
3. **A, C**
4. **B, C**

**Correct Answer:** Option (2)

---

**Question 53 Marks:** +1 / 0

**Question:**

Which are the only regions that contain two integers?

**Options:**

1. C, D
2. B, C
3. B

4. B, D

**Correct Answer: Option (4)**

---

**Question 54**

**Marks:** +1 / 0

**Question:**

The set representing **A** is:

**Options:**

1.  $\{15\}$
2.  $\{2, 15\}$
3.  $\{1, 15\}$
4. Empty set

**Correct Answer:**

**Option (1)**

---

**Question 55:**

**Marks:** +1 / 0

How many elements are there in region E?

**Options:**

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

**Correct Answer:** Option (1)

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**SECTION – A: ANALYTICAL ABILITY**

**2. Problem Solving**

**Subsection- 8**

**C. Coding and Decoding Problems**

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**Instructions:**

Based on the table and the rules given below, answer the questions from 56 to 60.

Numbers	1	0	5	2	6	3	9	7	4	8
Symbols	@	A	#	C	K	\$	%	G	*	©

**Rules:**

1. If the first digit is even and the last digit is odd, both of them are to be coded with the code of the first digit.
  2. If the first digit is odd and the last digit is even, their codes are to be interchanged.
  3. If the first digit and the last digit are both odd, both of them are to be denoted by the code of the last digit.
  4. If the first digit and the last digit are both even, then both of them are denoted by the code of the greatest digit.
- 

**Question 56****Marks:** +1 / 0**Question:**

What is the code for 243578?

**Options:**

1. ©\*\$G#©
2. ©\*\$#G©
3. C\*\$#G©
4. C\*\$#GC

**Correct Answer:** Option 2**Question 57****Marks:** +1 / 0**Question:**

What is the code for 1245678?

**Options:**

1. @CC\*#K©
2. GC\*#KK@
3. @GC\*K#G
4. ©C\*#KG@

**Correct Answer:** Option 4**Question 58****Marks:** +1 / 0

**Question:**

What is the code for 697845?

**Options:**

1. K%G©\*K
2. K%G©\*#
3. #%G©\*#
4. #%G©\*#

**Correct Answer:** Option 1

---

**Question 59**

**Marks:** +1 / 0

**Question:**

What is the code for 987366?

**Options:**

1. %©G\$KK
2. K©G\$K%
3. %©G\$K%
4. K©G\$KK

**Correct Answer:** Option 2

---

**Question 60**

**Marks:** +1 / 0

**Question:**

What is the code for 928657?

**Options:**

1. %C©K#G
2. %C©K#%
3. GC©K#G
4. GC©K#%

**Correct Answer:** Option 3

---

**SECTION – A: ANALYTICAL ABILITY**

**2. Problem Solving**

## **Subsection- 9**

### **C. Coding and Decoding Problems**

---

#### **Question 61**

**Marks:** +1 / 0

**Question:**

In a certain code, PROBLEM is coded as KELOVNP, then SOLUTION is coded as:

**Options:**

1. HLOFORLM
2. MHOFOSHN
3. MKEOFRLS
4. HMOPGANN

**Correct Answer:** Option 1

---

#### **Question 62**

**Marks:** +1 / 0

**Question:**

In a certain code the word NICE is coded as PLGJ and the word HAND is coded as JDRI. In the same code the word SWIM is coded as:

**Options:**

1. UGLO
2. UANQ
3. UZMR
4. UYOP

**Correct Answer:** Option 3

---

#### **Question 63**

**Marks:** +1 / 0

**Question:**

In a certain code DOG is coded as 420 and CAT is coded as 60. Then in the same code FLY is coded as:

**Options:**

1. 1800
2. 900

- 3. 450
- 4. 360

**Correct Answer:** Option 1

---

**Question 64**

**Marks:** +1 / 0

**Question:**

In a certain code PRIME is coded as NFIOQ, and MANGO is coded as HPNLZ, then in the same code the word GRAPE is coded as:

**Options:**

- 1. QFAHS
- 2. OFAFO
- 3. ODAFQ
- 4. ODAHS

**Correct Answer:** Option 2

---

**Question 65**

**Marks:** +1 / 0

**Question:**

In a certain code PYTHAGORUS is coded as OZSGBHPQVT, then which word is coded as CJQJDGKFS?

**Options:**

- 1. DIRICHLET
- 2. BHASKARAN
- 3. ALEXANDER
- 4. CATHERINE

**Correct Answer:** Option 1

---

**SECTION – A: ANALYTICAL ABILITY**

**2. Problem Solving**

**Subsection- 10**

**D. Date and Time & Arrangement Problems**

---

**Question 66**

**Marks:** +1 / 0

**Question:**

If today is Friday, then 214th day from today falls on which day?

**Options:**

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

**Correct Answer:** Option 3

---

**Question 67**

**Marks:** +1 / 0

**Question:**

What is the least time required after 4 o'clock for the hours hand and the minutes hand of a clock to be  $54^\circ$  apart?

**Options:**

1. 11 minutes
2. 10 minutes
3. 13 minutes
4. 12 minutes

**Correct Answer:** Option 4

---

**Question 68**

**Marks:** +1 / 0

**Question:**

At what time between 6 hours and 7 hours will the two hands in a clock be at right angle for the second time?

**Options:**

1. 6 hours  $16 \frac{4}{11}$  minutes
2. 6 hours  $44 \frac{6}{11}$  minutes
3. 6 hours  $41 \frac{9}{11}$  minutes
4. 6 hours  $49 \frac{1}{11}$  minutes

**Correct Answer:** Option 4

---

**Question 69**

**Marks:** +1 / 0

**Question:**

Ramana is a son of Shanta's father's sister and Lakshmi is the paternal grandmother of Shanta. How is Ramana related to Lakshmi?

**Options:**

1. Son
2. Nephew
3. Father
4. Grandson

**Correct Answer:** Option 4

---

**Question 70**

**Marks:** +1 / 0

**Question:**

At Vijayawada bus station a bus of city X starts to city Y (Hyderabad) every 45 minutes. An announcement says "a bus to Hyderabad has left 15 minutes ago and the next bus to Hyderabad is at 9:15 pm". Then the time at which the announcement was made is:

**Options:**

1. 8:15 pm
2. 8:30 pm
3. 8:45 pm
4. 8:55 pm

**Correct Answer:** Option 3

---

**Question 71**

**Marks:** +1 / 0

**Question:**

Sunit arrived at a place on Friday and came to know that he was three days earlier than the scheduled day of meeting. Had he reached there on the following Sunday, he would have been early/late by:

**Options:**

1. One day earlier
2. One day late
3. Two days earlier
4. Two days late

**Correct Answer:** Option 1

---

**Question 72**

**Marks:** +1 / 0

**Question:**

Six persons A, B, C, D, E and F are seated for a meeting around a round table facing the centre.

- C is the immediate left of E.
- F is between B and C.
- D is between A and E.
- A is to the immediate left of B.

Who is sitting between **F** and **E**?

**Options:**

1. A
2. B
3. C
4. D

**Correct Answer:**

**Option (3) – C**

---

**Question 73**

**Marks:** +1 / 0

**Question:**

If the symbols  $\square$ ,  $\Theta$ ,  $\otimes$ ,  $\oplus$  respectively denote  $+$ ,  $\div$ ,  $-$ ,  $\times$ , then find the value of:

$$\frac{(16 \square 4) \Theta (8 \otimes 4)}{(4 \oplus 8) \otimes (2 \oplus 16) \square 2}$$

**Options:**

1.  $-\frac{3}{2}$
2.  $-\frac{3}{4}$
3.  $\frac{3}{4}$
4.  $\frac{3}{2}$

**Correct Answer:**

**Option (4)**

---

**Question 74**

**Marks:** +1 / 0

**Question:**

If

$$a \alpha b = \frac{a + 2b}{3}, a \gamma b = \frac{2a + b}{2}$$

and

$$a \beta b = \frac{a + b}{2},$$

then find the value of:

$$(2 \alpha (3 \gamma 1)) \beta 4$$

**Options:**

1.  $\frac{7}{3}$
2. 7
3.  $\frac{7}{2}$
4. 14

**Correct Answer:**

**Option (3)**

---

**Question 75**

**Marks:** +1 / 0

**Question:**

If

$$a * b = 2a + b, a \oplus b = \frac{a + b}{2}, a \# b = 2(a + b),$$

Then find the value of:

$$\{[(1 * 1) \oplus 1] \oplus 1\} \# 1$$

**Options:**

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

**Correct Answer:**

**Option (2)**

---

## **SECTION – B: MATHEMATICAL ABILITY**

### **1. Arithmetical Ability**

---

**Question 76**

**Marks: +1 / 0**

**Question:**

If  $2^{m^{n^2}} = (2^m)^{n^2}$ , then min terms of  $n$  is:

**Options:**

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

**Correct Answer:**

**Option (2)**

---

**Question 77**

**Marks: +1 / 0**

**Question:**

If  $x \geq 0$  and  $x$  is an integer, then

$2^{3x} + 2^{3x+2} + 2^{3x+3}$  is always divisible by which integer?

**Options:**

1. 17
2. 11
3. 13
4. 7

**Correct Answer:**

**Option (3)**

---

**Question 78**

**Marks:** +1 / 0

**Question:**

Rs. 4000 is divided among P, Q and R, such that P gets as much as Q and R together, and Q gets Rs. 1000 more than R. Then R's share (in rupees) is:

**Options:**

1. 1000
2. 500
3. 2500
4. 1500

**Correct Answer:**

**Option (2)**

---

**Question 79**

**Marks:** +1 / 0

**Question:**

70 litres of mixture contains milk and water in the ratio \$4 : 1\$. How much water (in litres) must be added to this mixture so as to have milk and water in the ratio \$2 : 1\$?

**Options:**

1. 21
2. 7
3. 12
4. 14

**Correct Answer:**

Option (4)

---

**Question 80**

**Marks:** +1 / 0

**Question:**

$$\frac{2}{\sqrt{10 + 2\sqrt{21}}} - \frac{1}{\sqrt{12 - 2\sqrt{35}}} + \frac{1}{\sqrt{8 - 2\sqrt{15}}} = ?$$

**Options:**

1. 0
2.  $\sqrt{3}$
3.  $\sqrt{5}$
4.  $\sqrt{7}$

**Correct Answer: Option (1)**

---

**Question 81**

**Marks:** +1 / 0

**Question:**

$$\sqrt[4]{49 + 20\sqrt{6}} = ?$$

**Options:**

1.  $2 + \sqrt{3}$
2.  $\sqrt{2} + \sqrt{3}$
3.  $\sqrt{2} + 3$
4.  $\sqrt{2} - \sqrt{3}$

**Correct Answer: Option (2)**

---

**Question 82**

**Marks:** +1 / 0

**Question:**

For what values of  $x$  and  $y$ , the 6-digit number  $7x342y$  is divisible by 88?

**Options:**

1.  $x = 4, y = 6$
2.  $x = 6, y = 8$
3.  $x = 4, y = 4$
4.  $x = 8, y = 4$

**Correct Answer: Option (3)**

---

**Question 83**

**Marks:** +1 / 0

**Question:**

What is the least value of  $x$  for which the number  $73x421$  is divisible by 9?

**Options:**

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

**Correct Answer: Option (4)**

---

**Question 84**

**Marks:** +1 / 0

**Question:**

The least common multiple of two prime numbers  $a$  and  $b$  is 319 ( $a < b$ ).

Find the value of  $5a - 8b$ .

**Options:**

1. -177
2. 69
3. -109
4. 57

**Correct Answer: Option (1)**

---

**Question 85**

**Marks:** +1 / 0

**Question:**

A rectangular floor of dimensions  $4.96 \text{ m} \times 1.86 \text{ m}$  is to be paved with square tiles of side  $x \text{ cm}$  each.

Find the **greatest value of  $x$** .

**Options:**

1. 9
2. 35
3. 16

4. 23

**Correct Answer: Option (3)**

---

**Question 86**

**Marks:** +1 / 0

**Section:** B – Mathematical Ability

**Topic:** Arithmetical Ability

**Question:**

The rational number represented by the recurring decimal  $0.\overline{57}$  is:

**Options:**

1.  $\frac{23}{43}$
2.  $\frac{25}{43}$
3.  $\frac{26}{45}$
4.  $\frac{27}{44}$

**Correct Answer: Option (3)**

---

**Question 87**

**Marks:** +1 / 0

**Section:** B – Mathematical Ability

**Topic:** Arithmetical Ability

**Question:**

What is the least positive rational number to be added to

$$3\frac{2}{3} + 6\frac{7}{12} + 4\frac{1}{4} + 7\frac{1}{12}$$

to make it an integer?

**Options:**

1.  $\frac{11}{12}$
2.  $\frac{7}{12}$
3.  $\frac{5}{12}$
4.  $\frac{3}{11}$

**Correct Answer: Option (3)**

---

**Question 88**

**Marks:** +1 / 0

**Section:** B – Mathematical Ability

**Topic:** Arithmetical Ability

**Question:**

The ascending order of the fractions

$$a = \frac{5}{7}, b = \frac{13}{16}, c = \frac{3}{5}, d = \frac{97}{104}$$

is:

**Options:**

1.  $a, b, c, d$
2.  $b, c, d, a$
3.  $c, d, b, a$
4.  $d, b, a, c$

**Correct Answer: Option (4)**

---

**Question 89**

**Marks:** +1 / 0

**Section:** B – Mathematical Ability

**Topic:** Arithmetical Ability

**Question:**

The smallest number among

$$\frac{2}{7}, \frac{3}{5}, 135\frac{1}{2}, 59\frac{1}{3}$$

$7\frac{2}{3}, 5\frac{3}{2}, 135\frac{1}{2}, 59\frac{1}{3}$

is:

**Options:**

1.  $5\frac{3}{2}$
2.  $7\frac{2}{3}$
3.  $59\frac{1}{3}$
4.  $135\frac{1}{2}$

**Correct Answer: Option (2)**

---

**Question 90**

**Marks:** +1 / 0

**Section:** B – Mathematical Ability

**Topic:** Arithmetical Ability

**Question:**

The radius of a circle is increased by **20%**. Find the percentage increase in the **area of the circle**.

**Options:**

1. 48
2. 25
3. 20
4. 44

**Correct Answer:** Option (4)

---

**Question 91**

**Marks:** +1 / 0

Three persons P, Q, and R whose salaries together amount to Rs. 28,800, spend 75%, 85%, and 80% of their salaries respectively. If the savings of P, Q, and R are in the ratio 20 : 9 : 8, then the salary of Q (in rupees) is:

**Options:**

- 10,600  
9,800  
9,400  
9,600

**Correct Answer:** Option (4)

---

**Question 92**

**Marks:** +1 / 0

A shopkeeper fixes the marked price of an article 15% more than the cost price. He sold 75% of the articles at the marked price and the remaining 25% at a discount of 20% on the marked price. Then the percentage of his total profit is:

**Options:**

- 9.25  
9.50  
9.75

**Correct Answer:** Option (2)

---

**Question 93**

**Marks:** +1 / 0

A merchant sells his goods 15% less than the cost price. But he deceptively uses 800 gm weight instead of 1 kg while weighing the goods. Then the loss/profit percent is:

**Options:**

- 5 1/2% loss
- 6% profit
- 6 1/4% profit
- 6 1/4% loss

**Correct Answer:** Option (3)

---

#### **Question 94**

**Marks:** +1 / 0

Three persons X, Y, and Z started a business. Y left after 6 months, and Z left after 8 months. If at the end of the year, the profits of X, Y, and Z were shared in the ratio 1/6 : 1/4 : 1/3, then the ratio of the investments of X, Y, and Z is:

**Options:**

- 1:2:3
- 1:3:3
- 2:5:4
- 1:4:5

**Correct Answer:** Option (2)

---

#### **Question 95**

**Marks:** +1 / 0

A sum of Rs. 58,500 is divided among three persons P, Q, and R in such a way that the ratio of the share of P and that of Q and R together is 1:2, and the ratio of the share of Q and that of P and R together is 3:10. Then the share of Q in rupees is:

**Options:**

- 27,000
- 19,750
- 13,500
- 11,600

**Correct Answer:** Option (3)

---

**Question 96****Marks:** +1 / 0

Two pipes X and Y can fill an empty tank in 4 hours and 6 hours respectively. They are opened alternatively, starting with X for 15 minutes each. How much time is taken to fill the tank?

**Options:**

- 4 hours 18 minutes
- 4 hours 48 minutes
- 4 hours 36 minutes
- 4 hours 28 minutes

**Correct Answer:** Option (2)

---

**Question 97****Marks:** +1 / 0

Pipe A can fill an empty tank in 8 hours and B can fill it in 12 hours. But due to a leak at the bottom, they together take 1 hour 12 minutes extra to fill the tank.

The time in hours in which the leak alone can empty the full tank is:

**Options:**

- 20
- 21
- 22
- 24

**Correct Answer:** Option (4)

---

**Question 98****Marks:** +1 / 0

A train T1 runs at a speed of 80 kmph. Another train T2 runs at a speed of 100 kmph. T1 starts at 7 am from a station and T2 starts from the same station at 9 am. At what distance (in kms) from the starting point do they meet each other?

**Options:**

- 600
- 700
- 800
- 850

**Correct Answer:** Option (3)

---

**Question 99**

**Marks:** +1 / 0

How much time (in seconds) does a train 110 m long travelling at 70 kmph take to cross another train 240 m long standing on a parallel track?

**Options:**

20

18

17

16

**Correct Answer:** Option (2)

---

**Question 100**

**Marks:** +1 / 0

Two persons A and B can complete a piece of work in 24 days, B and C can complete the same work in 30 days. If A works twice as much as C, then in how many days can B alone complete that work?

**Options:**

36

39

40

42

**Correct Answer:** Option (3)

---

**Question 101**

**Marks:** +1 / 0

6 women can make 12 toys in 4 days, working 6 hours per day. In how many days 8 women can make 24 toys working 4 hours per day?"

**Options:**

1. 15
2. 9
3. 8

4. 12

**Correct Answer:** Option (2)

---

**Question 102**

**Marks:** +1 / 0

If the area of a trapezium whose lengths of parallel sides differ by 4 cm and whose height is 8 cm is  $112 \text{ cm}^2$ , then the length of the larger side of the parallel sides, in cm, is"

**Options:**

1. 16
2. 24
3. 28
4. 12

**Correct Answer:** Option (1)

---

**Question 103**

**Marks:** +1 / 0

The area (in sq.m.) of a rectangular plot whose perimeter is 18 m., and diagonal is 5 m. is

**Options:**

1. 30
2. 28
3. 26
4. 24

**Correct Answer:** Option (2)

---

**Question 104**

**Marks:** +1 / 0

. A wall of dimensions  $16 \text{ m} \times 6 \text{ m} \times 20 \text{ cm}$  is to be built using bricks each of dimensions  $30 \text{ cm} \times 20 \text{ cm} \times 5 \text{ cm}$ . The number of bricks required is

**Options:**

- 1. 1600
- 2. 3200
- 3. 6400
- 4. 4800

**Correct Answer:** Option (3)

---

### **Question 105**

**Marks:** +1 / 0

The circumference of the base of a cylinder is  $24\pi$  cm. If the height of the cylinder is equal to the diameter of the base of the cylinder, then its volume (in cu.cm.) is

**Options:**

- 1.  $1728\pi$
- 2.  $1828\pi$
- 3.  $2456\pi$
- 4.  $3456\pi$

**Correct Answer:** Option (4)

---

### **Question 106**

**Marks:** +1 / 0

A room is in the shape of a cuboid. Its length is twice its breadth and its height is 11 meters. If the area of its four walls is  $660\text{ m}^2$  and square tile of side of length 2 meters costs Rs.450, then the cost of tiling its floor area (in rupees) is

**Options:**

- 1. 22500
- 2. 20000
- 3. 45000
- 4. 90000

**Correct Answer:** Option (1)

---

### **Question 107**

**Marks:** +1 / 0

The length and breadth of a rectangular field are in the ratio 7:5. The length is

reduced by 2 meters and breadth is increased by 3 meters. As a result, the area is increased by 60 sq. meters. Then the cost of fencing around the field in new dimensions at the rate of Rs. 400 per meter (in rupees) is

**Options:**

1. 56400
2. 58400
3. 54600
4. 52400

**Correct Answer:** Option (2)

---

**Question 108**

**Marks:** +1 / 0

If the length of the side of a rhombus is 20 cm and the length of its shorter diagonal is 24 cm, then the area of the rhombus (in  $\text{cm}^2$ ) is

**Options:**

1. 192
2. 96
3. 288
4. 384

**Correct Answer:** Option (4)

---

**Question 109**

**Marks:** +1 / 0

Let  $m, n$  be any two positive integers. If  $m \times n$  is the remainder obtained when  $m^2n$  is divided by 23, then  $7 \times 3 =$

**Options:**

1. 7
2. 9
3. 13
4. 16

**Correct Answer:** Option (2)

---

**Question 110****Marks:** +1 / 0

The average of the numbers  $a_1, a_2, a_3, a_4, a_5$  which are remainders of  $6^2, 7^2, 8^2, 9^2, 10^2$  respectively when each one is divided by 18 is

1. 8.4
2. 8.2
3. 8
4. 7.8

**Correct Answer:** Option (1)

---

2. Algebraic and Geometrical Ability

**Question 111****Marks:** +1 / 0

If  $A = \{3k : k \in \mathbb{N}, 1 \leq k \leq 200\}$  and  $B = \{6k : k \in \mathbb{N}, 1 \leq k \leq 100\}$ , then the number of elements in  $A - B$  is

**Options:**

1. 100
2. 150
3. 200
4. 0

**Correct Answer:** Option (1)

---

**Question 112****Marks:** +1 / 0

For non empty sets A, B and C, which of the following statements are true?

**Options:**

1. (a), (b)
2. (a), (c)
3. (b), (c)

4. (c)

**Correct Answer:** Option (2)

---

**Question 113**

**Marks:** +1 / 0

$$(2x^2 - x)^2 - 4(2x^2 - x) + 3 =$$

**Options:**

1.  $(2x + 3)(2x + 1)(x - 1)(x + 1)$
2.  $(2x - 3)(2x - 1)(x - 1)(x + 1)$
3.  $(2x - 3)(2x + 1)(x - 1)(x + 1)$
4.  $(x - 3)(x + 1)(2x - 1)(x + 3)$

**Correct Answer:** Option (3)

---

**Question 114**

**Marks:** +1 / 0

If  $\alpha, \beta$  are the zeroes of the polynomial  $x^2 - 7x + k$  such that  $\alpha - \beta = 9$ , then the polynomial for which  $k$  is a zero among the following is"

**Options:**

1.  $2x^2 + 6x - 40$
2.  $x^2 + 11x + 24$
3.  $3x^2 + 41x + 138$
4.  $4x^2 + 33x + 18$

**Correct Answer:** Option (2)

---

**Question 115**

**Marks:** +1 / 0

If the polynomial  $3x^4 + 5x^3 + 6x^2 + ax + b$  is divisible by  $x^2 - 3x + 2$ , then the sum of the digits  $b - a$  is equal to the number

**Options:**

1. 11
2. 24
3. 32

4. 182

**Correct Answer:** Option (1)

---

**Question 116**

**Marks:** +1 / 0

If  $(x - 2)$  and  $(x + 2)$  divide  $2x^3 + 3x^2 + ax + b$ , then  $(a, b) =$ "

**Options:**

1. (8, -12)
2. (-8, -12)
3. (-8, 12)
4. (8, 12)

**Correct Answer:** Option (2)

---

**Question 117**

**Marks:** +1 / 0

If  $(x + y)/2 - (x - y)/3 = 8$  and  $(x + y)/3 + (x - y)/4 = 11$ , then  $x - 3y + 3 =$

**Options:**

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

**Correct Answer:** Option (3)

---

**Question 118**

**Marks:** +1 / 0

If  $(x + y) : (y + z) : (z + x) = 13 : 15 : 17$  and  $x + y + z = 360$ , then  $x + 2y + 3z =$

**Options:**

1. 688
2. 784
3. 752
4. 750

**Correct Answer:** Option (3)

---

**Question 119****Marks:** +1 / 0

If  $x^2 - 12x - 1 = 0$ , then  $(x^2 + 50x - 1) / (x^3 + x^{-1}) =$

**Options:**

1. 39/76
2. 35/73
3. 32/75
4. 31/73

**Correct Answer:** Option (4)

---

**Question 120****Marks:** +1 / 0

In an arithmetic progression, if the sum of first 10 terms is 3000 and the sum of first 20 terms is 12000, then the sum of first 30 terms is

**Options:**

1. 36000
2. 18000
3. 9000
4. 27000

**Correct Answer:** Option (4)

---

**Question 121****Marks:** +1 / 0

$1/3 + 2/9 + 4/27 + 8/81 + \dots + \dots =$

**Options:**

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

**Correct Answer:** Option (4)

---

**Question 122**

**Marks:** +1 / 0

$$4 \sec 450 \cosec 60 \sin^2 300 \cot 300 / \sec 600 \cos^2 450 =$$

**Options:**

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

**Correct Answer:** Option (1)

---

**Question 123**

**Marks:** +1 / 0

$$\sin 750 + \sin 150 / \cos 750 + \cos 150 =$$

**Options:**

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

**Correct Answer:** Option (2)

---

**Question 124**

**Marks:** +1 / 0

$$\tan A = 1/2, \tan B = 1/3 \Rightarrow \tan(2A + B) =$$

**Options:**

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

**Correct Answer:** Option (3)

---

**Question 125**

**Marks:** +1 / 0

$$\cos(x - y) = 3 \cos(x + y) \Rightarrow \tan x \cdot \tan y =$$

**Options:**

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

**Correct Answer:** Option (4)

---

### Question 126

**Marks:** +1 / 0

.  $B_1$  and  $B_2$  are two boats 300 mts apart and in a horizontal straight line passing through the foot of light house. The angles of depression of  $B_1$  and  $B_2$  from the top of light house are  $30^\circ$  and  $60^\circ$  respectively. Find the height of the light house (in meters).

**Options:**

1.  $150\sqrt{3}$
2.  $350\sqrt{3}$
3.  $180\sqrt{3}$
4.  $250\sqrt{3}$

**Correct Answer:** Option (1)

---

### Question 127

**Marks:** +1 / 0

The equation of line passing through the point  $(\alpha, \beta)$  and perpendicular to line joining  $(x_1, y_1)$  and  $(x_2, y_2)$  is

**Options:**

1.  $(y_2 - x_2)y + (y_1 - x_1)x = (y_2 - y_1)\alpha + \beta(x_2 - x_1)$
2.  $(y_2 + y_1)y + (x_2 + x_1)x = (x_2 + x_1)\alpha + \beta(y_2 + y_1)$
3.  $(y_2 + x_2)y + (y_1 + x_1)x = (y_2 + y_1)\alpha + (x_2 + x_1)\beta$
4.  $(y_2 - y_1)y + (x_2 - x_1)x = (x_2 - x_1)\alpha + \beta(y_2 - y_1)$

**Correct Answer:** Option (4)

---

### Question 128

**Marks:** +1 / 0

. In  $\triangle ABC$ , D and E are points respectively on AB and AC. If DE is parallel to BC,

$AD = x + 3$ ,  $BD = 2x - 3$ ,  $AE = x + 1$ ,  $BC = 2x - 2$ , then  $x =$

**Options:**

1.  $3/5$
2.  $2/5$
3.  $2/3$
4.  $3/4$

**Correct Answer:** Option (1)

---

**Question 129**

**Marks:** +1 / 0

ABCD is a quadrilateral.  $AB = 2AD$ ,  $\angle DAB = 90^\circ$ ,  $BD = 10$  cm and the altitude from C onto BD has measure 5 cm. Then the area (in sq. cm.) of the quadrilateral ABCD is

**Options:**

1. 36
2. 42
3. 45
4. 49

**Correct Answer:** Option (3)

---

**Question 130**

**Marks:** +1 / 0

An agricultural land is in the form of a quadrilateral ABCD. The length of the diagonal AC is 100 m and the lengths of the perpendicular drawn from B and D on AC are 48 and 52 m. The area of the quadrilateral in sq. m. is

**Options:**

1. 4200
2. 4560
3. 4850
4. 5000

**Correct Answer:** Option (4)

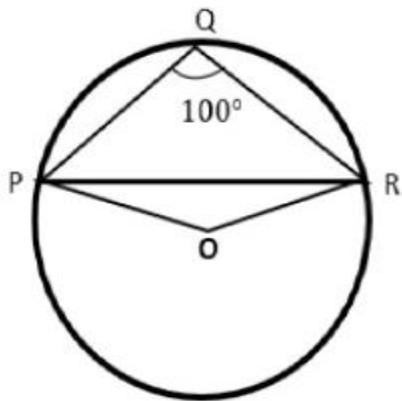
---

**Question 131**

**Marks:** +1 / 0

P, Q, R are points on a circle with centre O as shown in the adjacent diagram.

If  $\angle PQR = 100^\circ$ , then  $\angle OPR =$



1.  $10^\circ$
2.  $20^\circ$
3.  $30^\circ$
4.  $45^\circ$

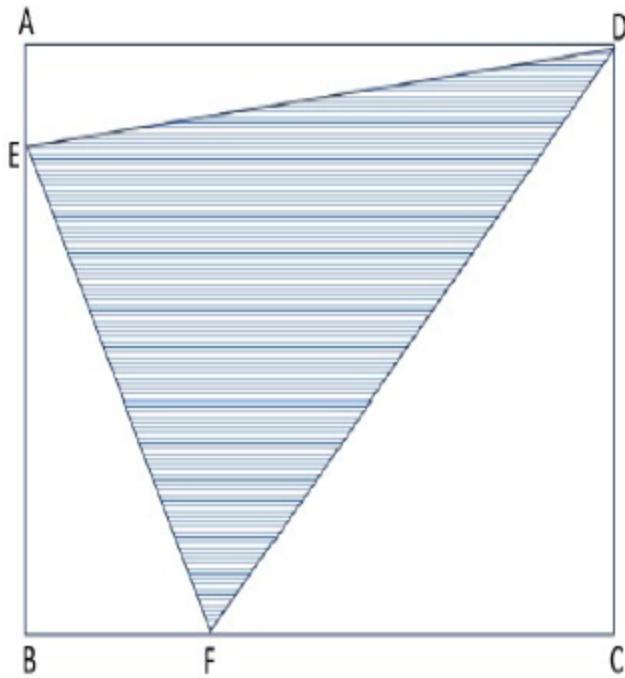
**Correct Answer:** Option (1)

---

### Question 132

**Marks:** +1 / 0

In the following figure ABCD is a rectangle. E and F are points on AB and BC respectively with  $AE = 1$  cm,  $BE = 3$  cm,  $BF = 2$  cm and  $FC = 4$  cm. Then find the area (in sq. cm) of the shaded region.



1. 8
2. 9
3. 10
4. 11

**Correct Answer:** Option (3)

---

### **Question 133**

**Marks:** +1 / 0

The line  $3x + 4y = 12$  cuts X- and Y-axes at A and B respectively. P is a point on AB that divides AB in the ratio 2 : 3 internally. Then the point P is

**Options:**

1. (6, 2)
2. (12, 6)
3.  $(12/5, 6/5)$
4.  $(6/5, 12/5)$

**Correct Answer:** Option (3)

---

### **Question 134**

**Marks:** +1 / 0

If  $(x_1, y_1)$  and  $(x_2, y_2)$  are the points of trisection of the line segment

intercepted by the line  $3x + 5y = 15$  between coordinate axes, then  $x_1 + x_2 + y_1 + y_2 =$

**Options:**

1.  $15/4$
2. 12
3.  $25/4$
4. 8

**Correct Answer:** Option (4)

---

### **Question 135**

**Marks:** +1 / 0

Which of the following lines makes X-intercept 4 and Y-intercept 5?

**Options:**

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

**Correct Answer:** Option (4)

---

### **Question 136**

**Marks:** +1 / 0

The equation of the straight line passing through the origin and is inclined at an angle of  $150^\circ$  with the positive side of the X-axis is

**Options:**

1.  $y = x$
2.  $y = \sqrt{3} x$
3.  $y = -(1/\sqrt{3}) x$
4.  $x + y = \sqrt{3}$

**Correct Answer:** Option (3)

---

### **Question 137**

**Marks:** +1 / 0

The slope of the line which is perpendicular to the line  $2x + 3y + 7 = 0$  is

**Options:**

1.  $-2/3$
2.  $2/3$
3.  $3/2$
4.  $-3/2$

**Correct Answer:** Option (3)

---

**Question 138**

**Marks:** +1 / 0

If the line  $x/5 + y/6 = 1$  is put in the form  $y = mx + c$ , then  $m^2 + c^2 =$

**Options:**

1.  $936/25$
2.  $61/25$
3.  $903/25$
4.  $613/25$

**Correct Answer:** Option (1)

---

**Question 139**

**Marks:** +1 / 0

The equation of straight line which makes an angle  $210^\circ$  with the positive direction of X-axis and making an intercept  $\sqrt{3}$  units on Y-axis is"

**Options:**

1.  $x + \sqrt{3}y + 3 = 0$
2.  $x - \sqrt{3}y - 3 = 0$
3.  $x - \sqrt{3}y + 3 = 0$
4.  $\sqrt{3}x - y + 3 = 0$

**Correct Answer:** Option (3)

---

**Question 140**

**Marks:** +1 / 0

If the lines  $y - 5 = 3(x - 4)$  and  $y + 6 = 5(x + 2)$  meet at the point  $A(\alpha, \beta)$ , then  $\alpha^2 + \beta^2 =$

**Options:**

1.  $283\frac{1}{2}$
2.  $382\frac{1}{2}$
3.  $582\frac{1}{2}$
4.  $683\frac{1}{2}$

**Correct Answer:** Option (3)

---

**Question 141**

**Marks:** +1 / 0

What is the mean of the following frequency distribution?

Class	0 – 6	6 – 12	12 – 18	18 – 24	24 – 30
frequency	12	8	5	3	2

**Options:**

1. 10
2. 12
3. 15
4. 17

**Correct Answer:** Option (1)

---

**Question 142**

**Marks:** +1 / 0

The marks obtained by 12 students in mathematics examination has mean 65. Later it was found that two observations are wrongly taken as 75 and 69 instead of 58 and 62 respectively. Then the correct mean of their marks is

**Options:**

1. 57
2. 60
3. 63
4. 55

**Correct Answer:** Option (3)

---

**Question 143**

**Marks:** +1 / 0

If the arithmetic mean of 6, 12, k, 24, 30 and 36 is 21, then k =

**Options:**

1. 24
2. 18
3. 20
4. 22

**Correct Answer:** Option (2)

---

3. Statistical Ability

**Question 144**

**Marks:** +1 / 0

Median of the following frequency distribution is

Class	0 - 10	10 - 20	20 - 30	30 - 40	40 - 50	50 - 60
Frequency	4	7	12	16	8	3

**Options:**

1. 29.75
2. 33.50
3. 34.75
4. 31.25

**Correct Answer:** Option (4)

---

**Question 145**

**Marks:** +1 / 0

. If a data contains the natural numbers 1, 2, 3, ..., 8 with frequencies  $1^2, 2^2, 3^2, \dots, 8^2$  respectively, then the median of the data is

**Options:**

1. 7
2. 6
3. 5

4. 4

**Correct Answer:** Option (1)

---

**Question 146**

**Marks:** +1 / 0

The mode of the following frequency distribution is (approximately)

Class	10 – 20	20 – 30	30 – 40	40 – 50	50 – 60	60 – 70	70 – 80
frequency	2	5	8	12	16	9	3

**Options:**

1. 53.64
2. 52.14
3. 49.26
4. 48.78

**Correct Answer:** Option (1)

---

**Question 147**

**Marks:** +1 / 0

**Question:** If the mean and median of a frequency distribution are 36 and 44 respectively, then find the value of the mode:

**Options:**

1. 40
2. 60
3. 65
4. 72

**Correct Answer:** Option (2)

---

**Question 148**

**Marks:** +1 / 0

**Question:** If three unbiased coins are tossed simultaneously, then the probability of getting exactly 2 heads is:

**Options:**

1.  $1/8$
2.  $3/8$
3.  $5/8$
4.  $7/8$

**Correct Answer:** Option (2)

---

**Question 149**

**Marks:** +1 / 0

**Question:** If two fair dice are rolled, what is the probability that the sum of the numbers that show up add to 8?

**Options:**

1.  $2/9$
2.  $1/6$
3.  $7/16$
4.  $5/36$

**Correct Answer:** Option (4)

---

**Question 150**

**Marks:** +1 / 0

**Question:** What is the probability that a non-leap year should have 53 Mondays?

**Options:**

1.  $6/7$

2.  $4/7$

3.  $2/7$

4.  $1/7$

**Correct Answer:** Option (4)

---

## **SECTION – C: COMMUNICATION ABILITY – Meanings**

**Question 151**

Marks: +1 / 0

Planned or done in secret, especially for an illicit purpose \_\_\_\_\_.

**Options**

- 1. unplanned
- 2. legal
- 3. **clandestine**
- 4. open

**Correct Answer:** Option (3)

---

**Question 152**

Marks: +1 / 0

That which lasts for a very short time \_\_\_\_\_.

**Options**

1. permanent
2. timeless
3. lasting
4. **ephemeral**

Correct Answer: Option (4)

---

**Question 153**

**Marks: +1 / 0**

That which is concise and forcefully expressed \_\_\_\_\_.

**Options**

1. **pithy**
2. voluntary
3. violent
4. lengthy

**Correct Answer: Option (1)**

---

**Question 154**

**Marks: +1 / 0**

He has a voice that is loud and powerful \_\_\_\_\_.

**Options**

1. feeble
2. active
3. passive
4. **stentorian**

**Correct Answer: Option (4)**

---

**Question 155**

**Marks: +1 / 0**

His suggestion is **absurd**. (The underlined word means:)

**Options**

1. absolute
2. **unreasonable**
3. reasonable
4. abstract

**Correct Answer: Option (2)**

---

**Question 156****Marks: +1 / 0**

The antonym of 'bleak'

**Options**

1. black
2. grim
3. **bright**
4. dark

**Correct Answer: Option (3)**

---

**Question 157****Marks: +1 / 0**

The synonym of 'compassion'

**Options: 1. kindness**

2. passion
3. compression
4. cruelty

**Correct Answer: Option (1)**

---

**Question 158****Marks: +1 / 0**

The synonym of 'cheap'

**Options: 1. expensive**

2. costly
3. easy
4. **inexpensive**

**Correct Answer: Option (4)**

---

**Question 159****Marks: +1 / 0**

The antonym of 'condemn'

**Options:**

1. disagree
2. **approve**

- 3. condone
- 4. conducive

**Correct Answer: Option (2)**

---

**Question 160**

**Marks: +1 / 0**

The antonym of 'fanatical' is

**Options:**

- 1. intolerant
- 2. fantastic
- 3. **moderate**
- 4. tactile

**Correct Answer: Option (3)**

---

**Question 161**

**Marks: +1 / 0**

He \_\_\_\_\_ English for the last ten years.

**Options:**

- 1. is learning
- 2. learns
- 3. **has been learning**
- 4. Will be learning

**Correct Answer: Option (3)**

---

**Question 162**

**Marks: +1 / 0**

The author \_\_\_\_\_ the story just now.

**Options:**

- 1. have completed
- 2. has been completed
- 3. completes
- 4. **has completed**

**Correct Answer: Option (4)**

---

**Question 163**

**Marks: +1 / 0**

Attend to this work immediately. (Rewrite in passive voice)

**Options:**

1. Let us attend to this work immediately.
2. He has attended to this work immediately.
3. **Let this work be attended to immediately.**
4. This work was attended to immediately

**Correct Answer: Option (3)**

---

**Question 164**

**Marks: +1 / 0**

Who wrote *My Experiments with Truth*? (Rewrite in passive voice)

**Options**

1. By whom is *My Experiments with Truth* written?
2. **By whom was *My Experiments with Truth* written?**
3. *My Experiments with Truth* written by who?
4. By whom has *My Experiments with Truth* written?

**Correct Answer: Option (2)**

---

**Question 165**

**Marks: +1 / 0**

No sooner \_\_\_\_\_ the station than the train arrived.

**Options**

1. as I reached
2. have I reached
3. than I reached
4. **had I reached**

**Correct Answer: Option (4)**

---

**Question 166**

**Marks: +1 / 0**

Though the boss is strict, he knows how to \_\_\_\_\_ his subordinates.

**Options**

1. get over with
2. **get along with**

3. get away with
4. get out with

**Correct Answer: Option (2)**

---

### **Question 167**

**Marks: +1 / 0**

The controller of Examinations decided to \_\_\_\_\_ the examinations due to the strike.

**Options:**

1. **put off**
2. put of
3. put in
4. put out

**Correct Answer: Option (1)**

---

### **Question 168**

**Marks: +1 / 0**

Despite their hostility for long, they decided to **bury the hatchet** and become friends again. The underlined idiom means:

**Options:**

1. To oppose tooth and nail.
2. **To reconcile after a conflict.**
3. To end their friendship.
4. To sharpen their knives.

**Correct Answer: Option (2)**

---

### **Question 169**

**Marks: +1 / 0**

I went to principal's chamber to protest, but I **got cold feet** at the last moment. The underlined idiom means:

**Options:**

1. **nervous and did not protest.**
2. bold and protested.
3. chills due to cold.
4. cough and cold.

**Correct Answer: Option (1)**

---

**Question 170****Marks: +1 / 0**

When he got the letter of appointment, he was **on cloud nine**.

The underlined idiom means:

**Options:**

1. He felt disappointed.
2. He felt like flying.
3. **He felt extremely happy.**
4. He felt it raised.

**Correct Answer: Option (3)**

---

**Question 171****Marks: +1 / 0**

I read \_\_\_\_\_ New York Times online every day.

**Options:**

1. a
2. **the**
3. an
4. one

**Correct Answer: Option (2)**

---

**Question 172****Marks: +1 / 0**

The Pacific Ocean is \_\_\_\_\_ deepest of all the oceans.

**Options:**

1. a
2. an
3. **the**
4. with

**Correct Answer: Option (3)**

**Question 173****Marks: +1 / 0**

*The Waste Land* is a poem \_\_\_\_\_ T.S. Eliot.

**Options:**

1. on
2. off
3. in
4. **by**

**Correct Answer: Option (4)**

---

**Question 174****Marks: +1 / 0**

He has been working in the University \_\_\_\_\_ 2010.

**Options:**

1. from
2. **since**
3. for
4. after

**Correct Answer: Option (2)**

---

**Question 175****Marks: +1 / 0**

He hit him hard \_\_\_\_\_ the spur of the moment and regretted later.

**Options:**

1. in
2. **with**
3. on
4. at

**Correct Answer: Option (2)**

---

**Question 176****Marks: +1 / 0**

It is a program in charge of rejecting unwanted incoming connection requests.

**Options:**

1. Hacker

2. **Firewall**
3. Flash
4. Browser

**Correct Answer: Option (2)**

---

**Question 177**

**Marks: +1 / 0**

Which of the following is used by bankers to process large volumes of cheques and drafts?

**Options:**

1. Optical Character Recognition Scanner.
2. Optical Mask Reader Scanner.
3. **Magnetic Ink Character Recognition reader.**
4. Barcode reader.

**Correct Answer: Option (3)**

---

**Question**

**178 Marks: +1 / 0**

Which of the following is secondary memory?

**Options:**

1. Cache memory
2. Non-volatile ROM
3. Volatile RAM
4. **Magnetic memory**

**Correct Answer: Option (4)**

---

**Question 179**

**Marks: +1 / 0**

The highest memory is

**Options:**

1. Terra Byte
2. **Geop Byte**
3. Peta Byte
4. Giga Byte

**Correct Answer: Option (2)**

---

**Question 180****Marks: +1 / 0**

MIME stands for

**Options:**

1. Multipurpose Internal Memory Exchange.
2. Multipurpose Intra Memory Education.
3. **Multipurpose Internet Mail Exchange.**
4. Mass Index of Memory Exchange.

**Correct Answer: Option (3)**

---

**Question 181****Marks: +1 / 0**

A record of the money that other people and business owe you.

**Options:**

1. **Accounts Receivable**
2. Capital
3. Accounts Payable
4. Accounts closed

**Correct Answer: Option (1)**

---

**Question 182****Marks: +1 / 0**

Expenses such as utilities, rent and employee salaries are considered as

**Options:**

1. Variable costs.
2. Gross income.
3. Net Income.
4. **Fixed costs.**

**Correct Answer: Option (4)**

---

**Question 183****Marks: +1 / 0**

KPI stands for

**Options:**

1. Key Prints Information.
2. **Key Performance Indicators.**
3. Knowledge performance Indicators.
4. Kinetic permission Indication.

**Correct Answer: Option (2)**

---

#### **Question 184**

**Marks: +1 / 0**

Defining capability that distinguishes a company from its competitors

**Options:**

1. Ability to be changed in size.
2. **Core competency.**
3. Lack of competency at the core.
4. Performance Received.

**Correct Answer: Option (2)**

---

#### **Question 185**

**Marks: +1 / 0**

CMS stands for

**Options:**

1. Centimeters
2. Content Monitoring system.
3. **Content Management system.**
4. Conflict Management service.

**Correct Answer: Option (3)**

---

#### **Question number (186 to 190)**

##### **Comprehension Passage- 1**

"A few days ago, I ran into an old friend who is currently one of the officials deciding India's economic and financial policies. He asked, 'And so, how is IIT doing?' I responded with 'Not so well actually. Your market friendly policies have forced us to raise the fee. So, we have 50% fewer Ph.D. applicants this year.' Not batting an eyelid, he shot back, 'obviously your Ph.D. students don't

have any market value.' Such people who look at everything as consumer products classify higher education as non-merit goods. Non-merit goods are those where only the individual benefits from acquiring them and not the society as a whole."

---

Sub Questions:

**Question 186**

**Marks: +1 / 0**

The author of the passage is \_\_\_\_\_.

**Options:**

1. **someone working for IIT.**
2. someone working for the government.
3. someone related to students' organization.
4. social activist in educational field.

**Correct Answer: Option (1)**

---

**Question 187**

**Marks: +1 / 0**

The friend of the author is \_\_\_\_\_.

**Options:**

1. A technocrat.
2. An alumnus of IIT.
3. **A policy maker in the government.**
4. An educationist.

**Correct Answer: Option (3)**

---

**Question 188**

**Marks: +1 / 0**

The author thinks increasing the fee has resulted in \_\_\_\_\_?

**Options:**

1. more admissions into Ph.D.
2. **less number of applications for Ph.D.**
3. increased number of applications for Ph.D.
4. hasn't made any difference.

**Correct Answer: Option (2)**

---

**Question 189****Marks: +1 / 0**

The friend of the author is of the opinion that \_\_\_\_\_.

**Options**

1. education benefits neither society nor individual.
2. education benefits the society only.
3. education benefits both the society and the individual.
4. **education benefits the individual only.**

**Correct Answer: Option (4)**

---

**Question 190****Marks: +1 / 0**

The express 'not batting an eyelid' means \_\_\_\_\_.

**Options**

1. not blinking the eye.
2. not telling a lie.
3. not telling the truth.
4. **not showing any concern.**

**Correct Answer: Option (4)**

---

**191-195 Comprehension Passage-2**

"These gentlemen brought their respect for the law with them and proclaimed it loudly while in the very act of breaking the law. Theirs was the law of slavery. The law of free speech and the law for the protection of public meetings they trampled underfoot, while they greatly magnified the law of slavery... No right was deemed by the fathers of the Government more sacred than the right of speech. It was in their eyes, as in the eyes of all thoughtful men, the great moral renovator of society and government. Daniel Webster called it a homebred right, a fireside privilege. Liberty is meaningless where the right to utter one's thoughts and opinions has ceased to exist. That, of all rights, is the dread of tyrants. It is the right which they first of all strike down. They know its power. Thrones, dominions, principalities, and power, founded in injustice and wrong, are sure to tremble, if men are allowed to reason of righteousness, temperance, and of a judgment to come in their presence. Slavery cannot

tolerate free speech. Five years of its exercise would banish the auction block and break every chain in the South. They will have none of it there, for they have the power. But shall it be so here?"

---

**Question 191****Marks: +1 / 0**

The author of the passage is against \_\_\_\_\_.

**Options:**

1. Freedom of expression.
2. **Law of slavery.**
3. Liberty.
4. Temperance.

**Correct Answer: Option (2)**

---

**Question 192****Marks: +1 / 0**

What is 'the great moral renovator of society and government' according to the constitutional experts?

**Options:**

1. Injustice and wrong.
2. Thrones.
3. Principalities.
4. **Right of speech.**

**Correct Answer: Option (4)**

---

**Question 193****Marks: +1 / 0**

What is the synonym for 'tyrant'?

**Options**

1. Democrat
2. **Dictator**
3. Slave
4. King

**Correct Answer: Option (2)**

**Question 194****Marks: +1 / 0**

Who called freedom of speech 'homebred right'?

**Options**

1. The author.
2. The southerners.
3. **Daniel Webster.**
4. The gentlemen.

**Correct Answer: Option (3)**

---

**Question 195****Marks: +1 / 0**

When does liberty become meaningless?

**Options**

1. If the law of slavery is not imposed.
2. If there are no restrictions on speech.
3. If there is excess of liberty.
4. **If one is not allowed to express one's thoughts and opinions.**

**Correct Answer: Option (4)**

---

**Comprehension Passage-3**

"The two teachers who helped Gandhiji to found Sevagram were previously associated with Tagore's Indian Centre for International Education at Shantiniketan. There, the great poet, artist, and international lecturer, conceived and brought to birth a plan of education completely short of the super facilities of western pedagogy. Nothing was supplied unless it contributed the immediate extension of the humanity of the students.

Tagore's 'Invitation to the world' was based upon certain tangible educational goals. First, to concentrate in Shantiniketan, in the midst of the ashram educational canopy (ashram originally meant 'work' of a practical nature) the different cultures of the East, especially those having their origin in India or sheltered and fostered there. Secondly, to lay in Shantiniketan and in the rural Reconstruction Department in Surul (named Sriniketan), the foundations of a happy, contented and human life for the villagers. In the rural Institute, practical work is done in farm and field in addition to classroom training.

Experiments on useful lines go on constantly. Tagore's philosophy of a complete life thus made him link up vocational training with mental development and a culture that is broad-based on the whole human experience. Third, to seek to establish a living relationship between East and West, to promote inter-cultural and inter-racial amity and understanding, and to fulfill the highest mission of the present age—the unification of mankind."

---

**Question 196****Marks: +1 / 0**

Tagore's Indian Centre for International Education was at \_\_\_\_\_.

**Options**

1. Sevagram.
2. Rural Reconstruction Department.
3. **Shantiniketan.**
4. Poona.

**Correct Answer: Option (3)**

---

**Question 197****Marks: +1 / 0**

Which of the following statements are true?

- a. Tagore was interested in western pedagogy.
- b. Tagore's focus in education was on practical work.
- c. Tagore's concept of education aimed at fulfilling the highest mission of the unification of mankind.
- d. Tagore aimed at a happy, contented and human life for the cities.

**Options**

1. a and b
2. **b and c**
3. c and d
4. a and d

**Correct Answer: Option (2)**

---

**Question 198**

**Marks: +1 / 0**

Tagore's Rural Reconstruction Department was interested in \_\_\_\_\_.

**Options**

1. Strict class room training alone.
2. Western culture.
3. **Classroom training as well as practical work in farms.**
4. Education without goals.

**Correct Answer: Option (3)**

---

**Question 199**

**Marks: +1 / 0**

Tagore's concept of education is \_\_\_\_\_.

**Options**

1. **Holistic.**
2. Partial.
3. Theoretical.
4. Abstract.

**Correct Answer: Option (1)**

---

**Question 200**

**Marks: +1 / 0**

Tagore wanted to promote \_\_\_\_\_.

**Options**

1. Gulf between East and West.
2. Disintegration of mankind.
3. **Inter-cultural and inter-racial amity.**
4. Parochial attitude.

**Correct Answer: Option (3)**

---