

KAMARAJ COLLEGE (Autonomous)

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(Affiliated to Manonmaniam Sundaranar University, Tirunelveli)

THOOTHUKUDI – 628 003

(12 Pages)

Reg. No:

Question Code No : 25003902

Course Code : 25USH011

UG Degree - End Semester Examinations, November 2025

First Semester

B.COM (HONOURS)

Problem Solving Through Aptitude-I

(For those who joined in June 2025 onwards)

Time : 3 Hours

Maximum : 75 Marks

PART - A (10 × 1 = 10 Marks)

Answer ALL Questions

Choose the correct answer:

1. What is the sum of the squares of the digits from 1 to 9?
(a) 105 (b) 260
(c) 285 (d) 385
2. If $2A = 3B = 4C$, then $A:B:C$ is equal to
(a) 2:3:4 (b) 3:4:6

(c) 4:3:2

(d) 6:4:3

3. $343 \times 49 / 216 \times 16 \times 81 =$

(a) $7^5/6^7$

(b) $7^5/6^8$

(c) $7^4/6^8$

(d) $7^6/6^7$

4. If $X+Y+Z=0$ then $X^3+Y^3+Z^3+3XYZ$ is equal to

(a) 0

(b) $6XYZ$

(c) $12XYZ$

(d) XYZ

5. The circumferences of an equilateral triangle is 8 cm. The inradius of the triangle is

(a) 3.25 cm

(b) 4 cm

(c) 3.5 cm

(d) 4.25 cm

6. The volumes of two spheres are in the ratio of 64:27. The ratio of their surface area is

(a) 1:2

(b) 2:3

(c) 9:16

(d) 16:9

7. A man riding his bicycle covers 150 meters in 25 seconds what is his speed in km per hour?

(a) 20

(b) 21.6

(c) 23

(d) 25

8. A train takes 9 seconds to cross a pole: if the speed of the

train is 48 KMPH, then length of the train is

- (a) 150 meters (b) 120 meters
(c) 90 meters (d) 80 meters

9. The 10th terms of 6,4,2... is

- (a) -12 (b) 10
(c) -10 (d) 12

10. Pointing at a lady, Rohan said she is my wife's daughter's father's mother. How is that lady related to Rohan?

- (a) Sister (b) Daughter
(c) Mother (d) Wife

PART - B (5 X 5 = 25 Marks)

Answer ALL Questions choosing either (a) or (b).

Answer should not exceed 250 words.

11. (a) Find the H.C.F. of 513, 1134 and 1215.

(OR)

(b) Mr. Jones gave 40% of the money he had, to his wife. He also gave 20% of the remaining amount to each of his three sons. Half of the amount now left was spent on miscellaneous items and the remaining amount of Rs.12,000 was deposited in the bank. How much money

did Mr.Jones have initially?

12. (a) If $a^2+b^2= 117$ and $ab=54$ then find the value $a+b /a-b$.

(OR)

- (b) If $a/b= 4/5$ and $b/c= 15/16$, find the value of c^2-a^2/c^2+a^2

13. (a) A conical tent is required to accommodate 5 persons and each person needs 16cm^2 of space on the ground and 100 cubic meters of air to breathe. Find the vertical height of the tent.

(OR)

- (b) The perimeters of two squares are 40 cm and 32cm. Find the perimeter of a third square whose area is equal to the difference of the areas of the two squares.

14. (a)

Shops	Number of laptops sold	Number of desktops sold
A	350	200
B	390	520
C	440	550
D	550	660

1. What is the average number of desktops sold by shops A, B and D?

a)460 b) 420 c) 440 d) 500

2. What is the total number of laptops sold by shops A,

B and C together?

a) 1180 b) 1080 c) 1160 d) 1140

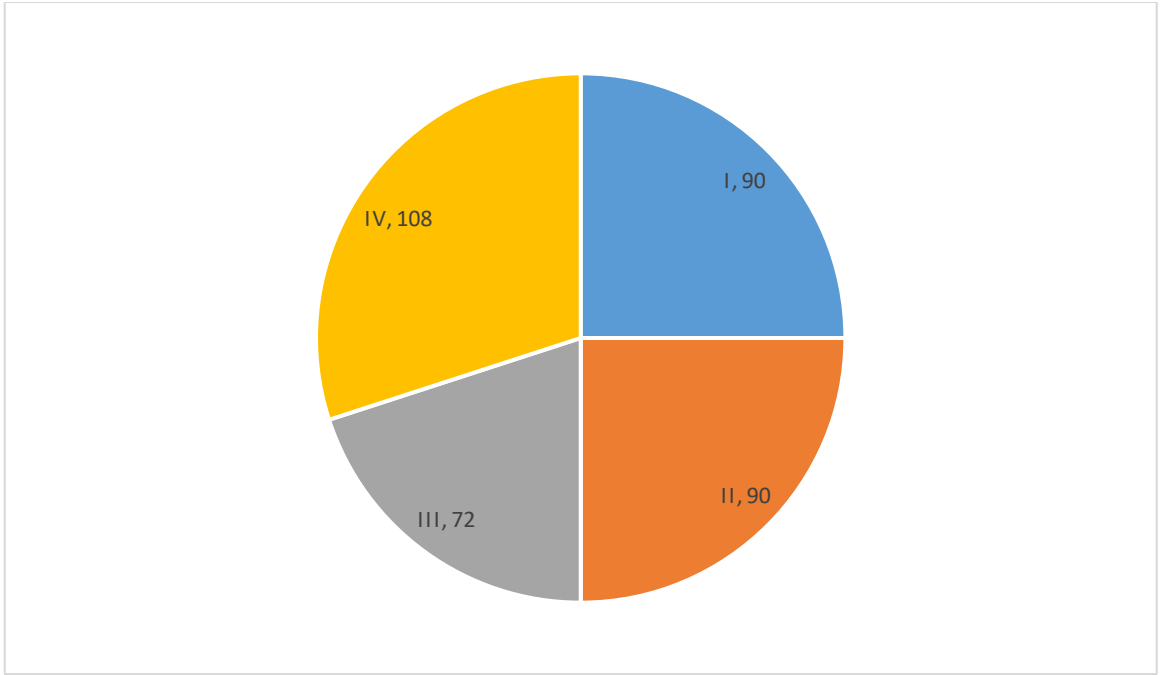
3. What is the respective ratio between total number of laptops sold by shops C and D together and number of desktops sold by shop D?

a) 8:5 b) 5:4 c) 3:2 d) 2:1

(OR)

(b) The total expenditure of a company for a particular month is Rs.60,000. The various heads of expenditure I to IV are indicated in a pie chart given below. These heads are:

- i. Raw materials
- ii. Conveyance
- iii. Electricity
- iv. Overhead expenses.



1. Total expenditure on conveyance is

- a) 12,000 b) Rs.15,000 c) 20,000 d) 10,000

2. What percentage of total expenditure is on electricity?

- a) 23% b) 25% c) 30% d) 20%

3. What is the amount spent on overhead expenses?

- a) Rs.12,000 b) Rs.15,000 c) 18,000 d) 10,000

15. (a) In the following number series, a wrong number is given.

Find out the wrong number

1. 36, 18, 27, 70, 236.25, 1063.125

- a) 1063.125 b) 236.25 c) 27 d) 70

2. 1, 11, 35, 79, 124, 251

- a)35 b) 79 c) 124 d) 251
3. 92, 291, 295,268,284,161
a) 291 b) 292 c) 161 d) 284

(OR)

- (b) If the 3rd and 6th terms of an A.P are 7 and 13 respectively, find the first term and the common difference between and hence find the sum of first 30 terms.

PART - C (5 X 8 = 40 Marks)

Answer ALL Questions choosing either (a) or (b).

Answer should not exceed 500 words.

16. (a) A mixture contains 40% A and the rest B. After 20% of it has been sold out, it is desired to mix as much of A as would raise the proportion to 1:1. If the remaining mixture be 18 litres, how many litres of A should be added?

(OR)

- (b) A bill for Rs.6000 is drawn on July 14 at 5 months. It is discounted on 5th October at 10%. Find the banker's discount, banker's gain and the money that the holder of the bill receives.

17. (a) If $a = \frac{4xy}{x+y}$, find the value of $\frac{a+2x}{a-2x} + \frac{a+2y}{a-2y}$

(OR)

(b) Find the equation of the line which is parallel to $2x - y - 9$ and which passes through intersections $5x + y - 4 = 0$ and $2x + 3y - 1 = 0$.

18. (a) The length of a rectangle R is 10% more than the side of a square S. The width of the rectangle R is 10% less than the side of the square S. What is the ratio of the area of R to that of S?

(OR)

(b) A conical vessel, whose internal radius is 12 cm and height 50 cm, is full of liquid. The contents are emptied into a cylindrical vessel with internal radius 10 cm. Find the height to which the liquid rises in the cylindrical vessel.

19. (a) From the following table, find out the answer for the given questions.

Number of the members in 5 book clubs during 5 given

Year/ Book Club	2006	2007	2008	2009	2010
M	189	133	169	113	189
N	125	164	205	129	187

O	121	120	189	178	195
P	147	167	145	147	123
Q	129	234	154	169	177

1. Number of members in book club O increased by what percent from 2007 to 2010?

a) 65 b) 64.5 c) 58 d) 62.5

2. What is the difference between total number of members in book clubs O and P together in 2006 and that in book clubs M and N together in 2008?

a) 98 b) 94 c) 106 d) 104

3. What is the respective ratio between total number of members in book club M in 2006 and 2010 together and that in book club Q in the same years together?

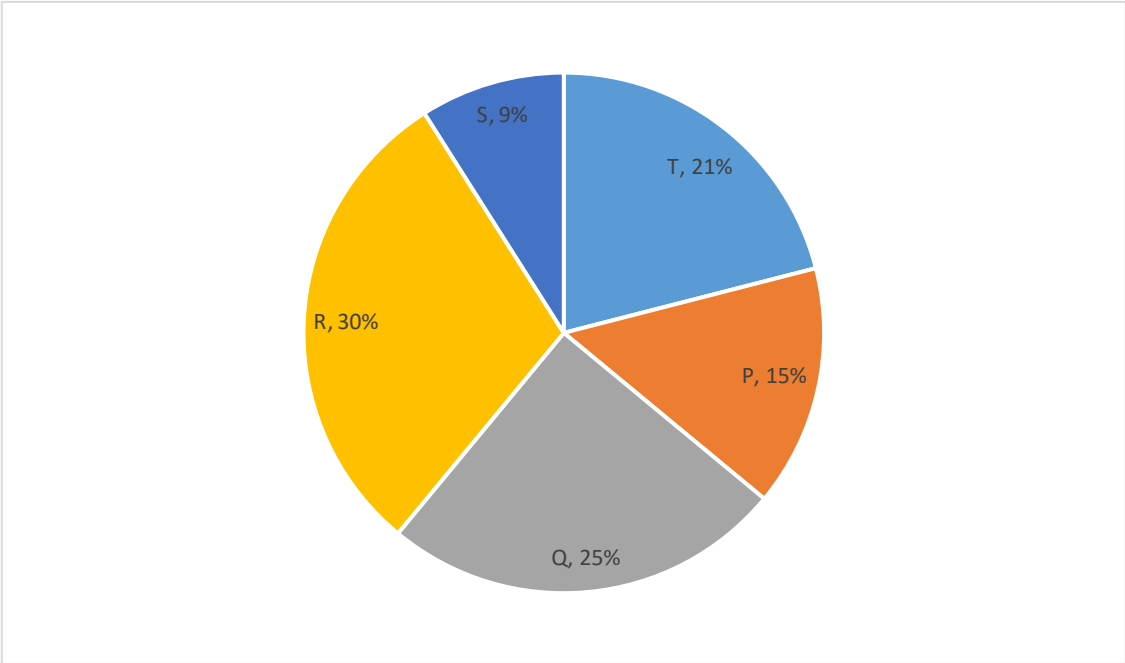
a) 21:17 b) 21:19 c) 19: 17 d) 23:19

4. What is the average number of members in book clubs M, N, and Q in 2007?

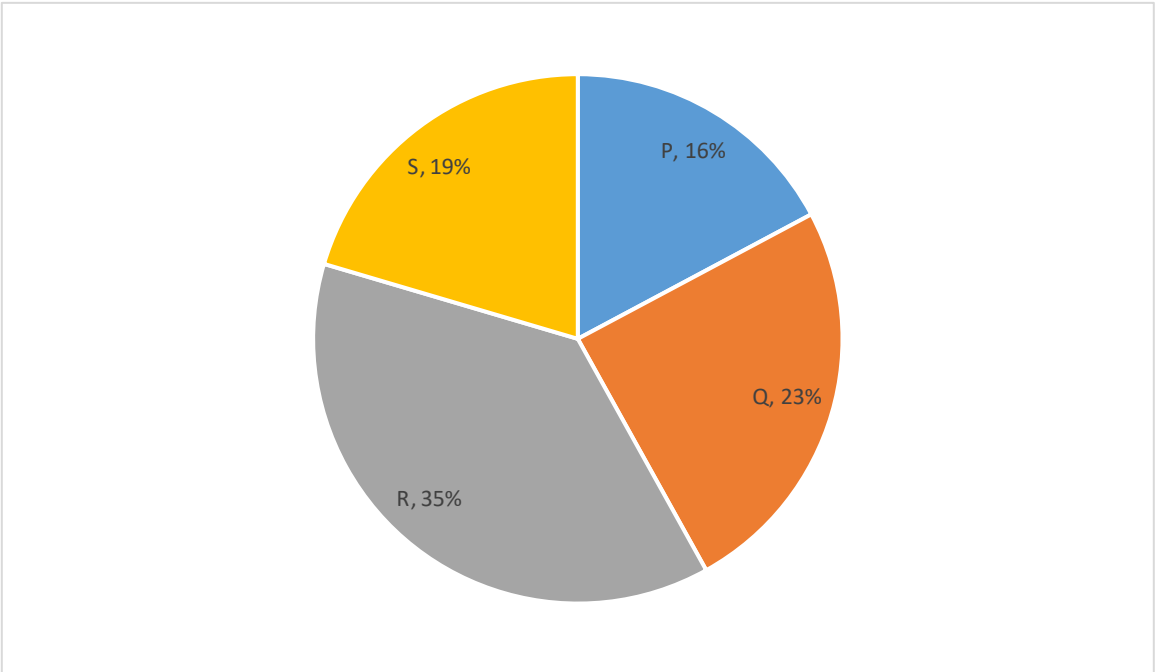
a) 179 b) 181 c) 177 d) 183

(OR)

(b) Distribution of total number of Dell Laptops sold by 5 stores



Distribution of number of Laptops (both Delhi and Lenovo) sold by 5 stores in 2011.



1. What is the average number of Dell Laptops sold by stores P, R and S together?

a) 424 b) 432 c) 454 d) 428

2. What is the central angle corresponding to number of Delhi laptops sold by store S?

a) 29.4° b) 38.6° c) 36.2° d) 32.4°

3. Number of Dell laptops sold by store Q is approximately what percent of the number of the number of laptops (both Dell and Lenovo) sold by store R?

a) 28% b) 45% c) 50% d) 38%

4. What is the difference between number of laptops (both Dell and Lenovo) sold by store Q and total number of Lenovo laptops sold by store R and S together?

a) 185 b) 99 c) 91 d) 119

20. (a) A class consists of a number boys whose ages are in A.P. the common difference being 4 months. If the youngest boy of the class be only 8 years old and the sum of the ages of all the boys in the class be 168 years, find the number of boys and the age of the oldest boy.

(OR)

- (b) Find 3 terms in G.P. if their sum is 26 and their product is 216.