



Register Number:

DATE:

ST. JOSEPH'S COLLEGE (AUTONOMOUS), BANGALORE-27

IV SEMESTER

SEMESTER EXAMINATION: APRIL 2019

MTOE 4116: Quantitative Methods For Competitive Examinations

Time- 1 ½ hrs.

Max Marks-35.

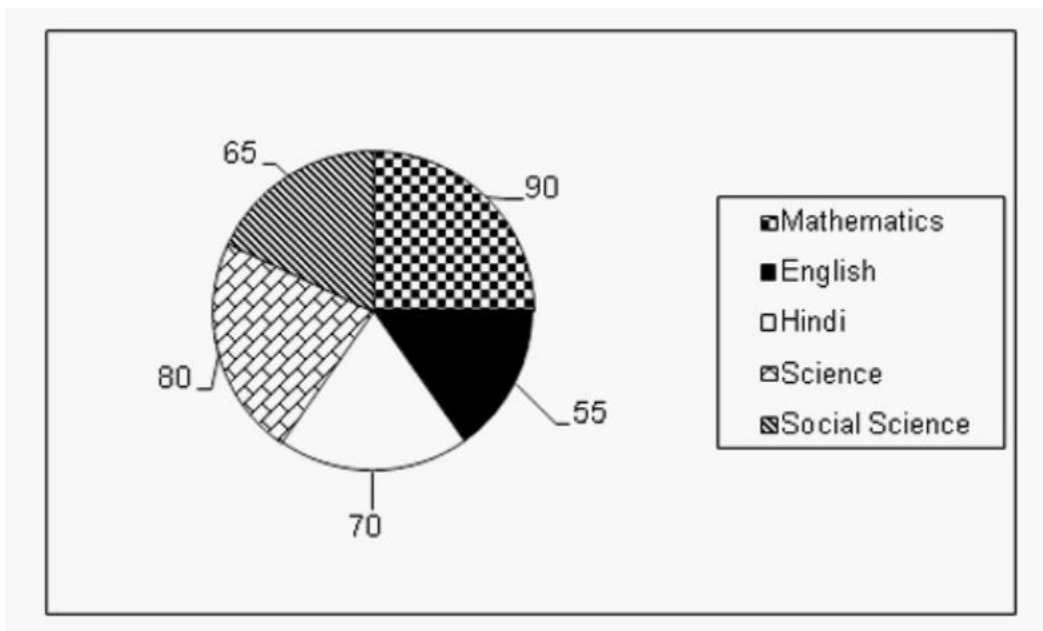
This question paper has three printed pages.

Answer any seven from the following questions

7 X 5 = 35

1. (a) In a division, the remainder is 0, when a student mistook the divisor as 12 instead of 21 and obtained 35 as quotient. What is the correct quotient?
(b) $108+109+110+\dots +202=?$ (2+3)
2. (a) 40% of $\frac{2}{3}$ of a number is 32. What is the number?
(b) Two students appeared at an examination. One of them secured 9 marks more than the other and his marks was 56% of the sum of their marks. Find the marks obtained by both of them. (2+3)
3. (a) In how many different ways can the letters of the word 'LEADING' be arranged such that the vowels should always come together?
(b) There are 8 men and 10 women and you need to form a committee of 5 men and 6 women. In how many ways can the committee be formed? (2+3)
4. A mixture contains alcohol and water in the ratio 4 : 3. If 5 liters of water is added to the mixture, the ratio becomes 4: 5. Find the quantity of alcohol in the given mixture. (5)
5. (a) Ram, Krish and Bhim can complete a work in 30 days .If Ram and Krish together can complete the same work in 40 days, then how long will Bhim take to complete it?
(b) Pipe A can fill a tank in 12 hours. Due to a leak at the bottom it takes 20 hours to fill the tank. In what time the leak alone can empty the full tank? (2+3)

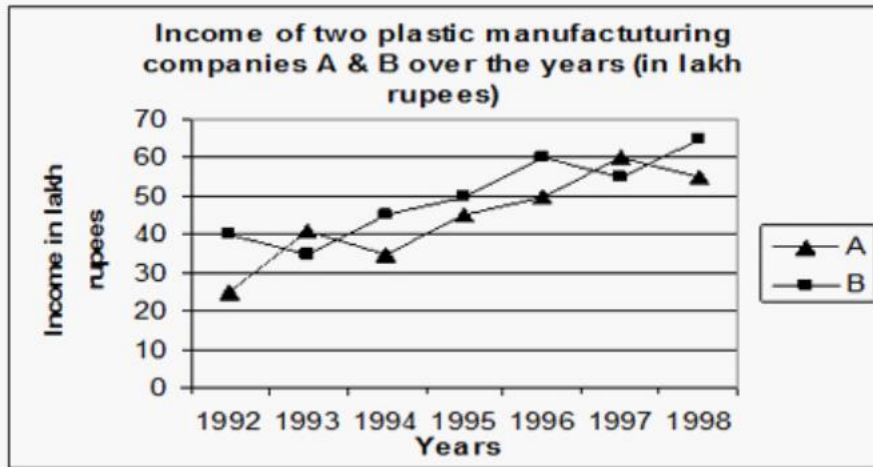
6. Two buses A and B leave the same bus depot, A towards the North and B towards the East. The bus A travels at a speed of 5 km/hr more than that of the bus B. If after four hours the distance between the two buses is 100 km, find the speed of the bus A. (5)
7. What will be the cost of building a fence around a square plot with area equal to 324 sq. ft., if the price per foot of building the fence is Rs. 50? (5)
8. The diameter of a sphere is 13.5m. Find its surface area and volume of the sphere. (5)
9. The given pie chart shows the marks scored by a student in different subjects- English, Hindi, Mathematics, Science and Social Science in an examination. The values given are in degrees.



- i. If the total were in 3000, then marks in mathematics would be
 (a) 750 (b) 800 (c) 850 (d) 900
- ii. Assuming total marks to be 900. The marks scored in English and Mathematics is less than the marks scored in Science and Hindi by
 (a) 6% (b) 5% (c) 4.33% (d) 3.33% (2+3)

10. Analyse the line graph given below to answer the questions.

Assumption: Profit is taken as percentage of expenditure.



- i. What would be the ratio of income of company B in 1996 to the income of company A in 1993?
- (a) 9:10 (b) 10:9 (c) 3:2 (d) 15:13
- ii. If in the year 1995, company 'B' had a profit of 25%, what approximately was its expenditure in the year 1995?
- (a) Rs. 22 lakhs (b) Rs. 27 lakhs (c) Rs. 29 lakhs (d) Rs. 40 lakhs

(2+3)
