

**1/MDC-110 Syllabus-2023**

**2024**

( December )

**FYUP : 1st Semester Examination**

**MULTIDISCIPLINARY COURSE**

**( Commercial Arithmetic and  
Elementary Statistics )**

**MDC-110**

Marks : 56

Time : 2½ hours

*The figures in the margin indicate full marks  
for the questions*

**SECTION—A**

Answer any *four* of the following questions : 4×4=16

1. Monthly incomes of Vijay and Viru are in the ratio of 9 : 7 and those of Viru and Vasant are in the ratio 3 : 2. If 10% of Vijay's income exceeds 15% of Vasant's income by ₹ 90, find the incomes of Vijay, Viru and Vasant.
2. Find the difference between simple and compound interest on ₹ 5,000 invested for 4 years at 5% p.a., interest payable yearly.
3. The banker's gain on a sum due 3 years hence at 5% is ₹ 9,000. Find the banker's discount.

D25/896

( Turn Over )

( 2 )

4. One card is drawn at random from a deck of cards. What is the probability of drawing a card which is either King or Queen?
5. What are the key fields where Statistics is commonly applied?
6. Bring out the merits and demerits of diagrammatic presentation.

SECTION—B

Answer any *four* of the following questions :

10×4=40

7. A man bought an article for ₹ 19,500, spent ₹ 300 on its carriage and ₹ 200 on octroi duty. If he sells the articles for ₹ 22,000, find his profit or loss percent. If he desires to make a profit of 20%, at what price should he sell it?
8. A car travels from city A to city B, a distance of 240 km, at an average speed of 60 km/h. After reaching city B, the car immediately returns to city A but due to traffic, the average speed for the return trip is only 40 km/h. Calculate the following :  $2+2+2+4=10$ 
  - (a) The time taken for the journey from city A to city B

D25/896

( Continued )

- (b) The time taken for the journey from city B back to city A
- (c) The total time taken for the entire journey
- (d) The average speed for the entire journey

9. (a) A student is taking three subjects in a semester, namely Mathematics, Accountancy and Economics. The grades that he received in these subjects are as follows :

Mathematics : 85

Accountancy : 90

Economics : 75

Calculate the weighted average of the grades if the weights of the subjects are as follows :

5

Mathematics : 4 credits

Accountancy : 3 credits

Economics : 2 credits

- (b) The average age of first 40 workers in a factory is 20 years and that of the remaining 60 workers is 30 years. 20 workers left from the group of 60 workers and were joined by 20 new worker with the average age of 28 years.

Calculate the average age of 100 workers.

5

10. For a symmetrical distribution, first quartile is 48 and quartile deviation is 6. Find median and upper quartile.
11. Calculate mean and standard deviation for the following data :

| Class intervals | Frequency |
|-----------------|-----------|
| 5-10            | 6         |
| 10-15           | 5         |
| 15-20           | 15        |
| 20-25           | 10        |
| 25-30           | 5         |
| 30-35           | 4         |
| 35-40           | 3         |
| 40-45           | 4         |

12. (a) Briefly highlight the difference between stock and shares. 4
- (b) Find the market value of a stock where—
- (i) ₹ 21,200; 3% stocks are bought for ₹ 21,518;
- (ii) ₹ 5,000, 5% stocks are sold for ₹ 5,495; brokerage being  $\frac{1}{10}\%$ . 3+3=6

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