

Roll No.....

Time allowed : 3 hours

Maximum marks : 100

Total number of questions : 8

Total number of printed pages : 4

PART - A

(Answer Question No.1 which is compulsory
and any two of the rest from this part.)

1. Attempt any four of the following :
 - (i) Explain the types of information system.
 - (ii) Explain the characteristics of decision support system.
 - (iii) What is 'optical disk' ? Explain.
 - (iv) Elaborate the concepts of data structure.
 - (v) What do you understand by query languages ? Give examples.
(5 marks each)

2. (a) Define 'programming'. Mention the steps involved in programming process. Discuss the common control structures used in coding the programme.
(8 marks)

- (b) Mention the components of a typical computer system. Discuss functions of communication paths used in computer systems.
(7 marks)

3. Write notes on any three of the following :
 - (i) CASE tools
 - (ii) Computer crimes
 - (iii) Value and cost of information
 - (iv) Networking softwares.
(5 marks each)

4. (a) What are the basic roles performed by information system in an organisation ? Discuss different resources used by an information system.
(7 marks)

- (b) (i) Define 'number system'. What is 'base' or 'radix' of number system ?

(2 marks)

- (ii) Convert the following from one number system to another number system as indicated against each, and also show workings clearly :

$$(187)_{10} = (?)_{16}$$

$$(0.875)_{10} = (?)_2$$

$$(C14A)_{16} = (?)_{10}$$

(6 marks)

PART - B

(Answer Question No.5 which is compulsory and any two of the rest from this part.)

5. (a) Discuss the important features of operations research. Name some of the operation research techniques.
- (b) State the limitations of statistics.
- (c) Compare mean, median and mode.
- (d) Discuss the significance of time series analysis.
- (e) Draw 'less than' and 'more than' ogives for the following distribution of weekly wages of 100 workers :

Weekly

Wages (Rs.) 0-100 100-200 200-300 300-400 400-500

No. of

Workers 8 30 35 20 7

(4 marks each)

6. (a) Distinguish between the following :
- (i) 'Primary data' and 'secondary data'.
- (ii) 'Classification of data' and 'tabulation of data'.
- (3 marks each)

- (b) (i) Out of 100 numbers, 20 were 4's, 40 were 5's, 30 were 6's and remainder 7's. Find the arithmetic mean of the numbers.
- (ii) Find the median of –
25, 14, 28, 30, 25, 15, 32.
- (iii) Four groups of students consisting of 15, 20, 10 and 18 individuals, reported mean heights of 1.62, 1.48, 1.53 and 1.40 meters respectively. Find the mean height of all the students.

(3 marks each)

7. (a) For a certain bivariate data, the two lines of regression are $5X-6Y+90 = 0$ and $15X-8Y-130 = 0$. Determine which line is regression of Y on X and which is regression of X on Y? Find the means of X and Y values and coefficient of correlation between them.

(7 marks)

- (b) Write a short note on 'graphical solution of linear programming problem'.

(4 marks)

- (c) The price index of cosmetics was 110 in 1956 with base as 1950 and 120 in 1957 with 1956 as base. It further increased by 30% in 1958 in relation to the price index of 1957 and decreased by 10% in 1959 as compared to its level in 1958. Find the index for 1959 with 1950 as base year.

(4 marks)

8. (a) A manufacturer of television tubes has two types of tubes A and B. The tubes have respective mean life times $X_A=1495$ hours and $X_B=1875$ hours and standard deviations $S_A=280$ hours and $S_B=310$ hours. Which tube has the greater (i) absolute dispersion; and (ii) relative dispersion?

(8 marks)

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: 4 :

- (b) Find the coefficient of linear correlation between the variables X and Y presented in the following table :

X	1	3	4	6	8	9	11	14
Y	1	2	4	4	5	7	8	9

(7 marks)

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