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. (a) Comment on the characteristics and quality of 'information'.

(6 marks)

   (b) Convert **any three** of the following from one number system to another number system as indicated against each, and also show your workings clearly :

   (i) $(11001)_2$ =   ($)_{10}$

   (ii) $(1AC)_{16}$ =   ($)_{10}$

   (iii) $(42)_{10}$ =   ($)_2$

   (iv) $(952)_{10}$ =   ($)_8$

(2 marks each)

   (c) Explain the following in one or two line(s) :

   (i) VRAM

   (ii) MROM

   (iii) Cache memory

   (iv) Open systems

   (v) Track ball

   (vi) Bar code reader

   (vii) Primary memory

   (viii) Secondary memory.

(1 mark each)

2. (a) Write brief notes on the following :

   (i) System boundary

   (ii) Sub-systems

   (iii) Supra-system

   (iv) Interface

   (v) Analog computer.

(2 marks each)

(b) Draw a flow chart for the process which will collect only positive numbers from a given list of numbers. If zero appears as the number, the programme terminates :

–2, 3, –5, 6, 7, 10, –9, 0

(5 marks)

3. Distinguish between ***any three*** of the following :

 (i) 'Compiler' and 'interpreter'.

 (ii) 'Hierarchical structure of database' and 'network structure of database'.

(iii) 'System software' and 'application software'.

(iv) 'Batch processing' and 'real time processing'.

(5 marks each)

4. Write notes on ***any three*** of the following :

 (i) Impact and non-impact printers

 (ii) Functions of operating system

(iii) System flow charts

(iv) Types of database.

(5 marks each)

PART—B

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

5. (a) Discuss ***any three*** of the following with examples :

 (i) Statistics are aggregate of facts.

 (ii) Statistics are affected to a marked extent by multiplicity of causes.

(iii) Statistics should be placed in relation to each other.

(iv) Statistics do not deal with isolated measurements.

(3 marks each)

(b) Write short note on 'application of quantitative techniques in marketing'.

(3 marks)

(c) Distinguish between 'direct interview' and 'indirect interview'.

(3 marks)

(d) Discuss the dual of a linear programming problem.

(5 marks)

6. (a) From the following data, determine the co-efficient of correlation using Karl Pearson's direct method based on values :

M_1	75	60	45	30	15
M_2	150	175	200	225	250

(7 marks)

   (b) From the following particulars of journey on a scooter, find the average speed of the scooter by using both the 'harmonic mean' and the 'arithmetic mean'. Also, prove that the harmonic mean gives a better result :

First 160 kms. covered in 5 hours.

Next 160 kms. covered in 4 hours.

(8 marks)

7. (a) Explain the merits and demerits of 'arithmetic mean'.

(4 marks)

   (b) Discuss the steps of 'forecasting'.

(4 marks)

   (c) Following distribution shows the turnover of the branches of a group of multiple-shops in March, 2008 :

Turnover (Rs. in Lakhs)	*No. of Shops*
5 and under 10	8
10 and under 15	18
15 and under 20	42
20 and under 25	62
25 and under 30	30
30 and under 35	10
35 and over	4

Using assumed mean of Rs.22.5 lakh, calculate — (i) mean; (ii) standard deviation; and (iii) co-efficient of variation.

(7 marks)

8. (a) Represent the following frequency distribution by a histogram :

Class Interval	0-10	10-15	15-30	30-40	40-60
Frequency	8	10	36	40	32

(3 marks)

(b) Calculate geometric mean of the following distribution :

Wages	100-110	110-120	120-130	130-140	140-150	150-160
No. of Workers	20	32	33	17	8	2

(3 marks)

(c) From the following distribution of weekly wages of workers, determine the median wage :

Wages	50-100	100-150	150-200	200-250	250-300
No. of Workers	25	42	63	50	20

(3 marks)

(d) The data given below relates to sales and advertisement expenditure of 20 companies. You are required to form a bivariate frequency distribution with class intervals 62 to 64, 64 to 66 and so on, and 115 to 125, 125 to 135 and so on :

Company	Sales (Rs. in Lakhs)	Advertisement Expenditure (Rs. in Lakhs)	Company	Sales (Rs. in Lakhs)	Advertisement Expenditure (Rs. in Lakhs)
1	170	70	11	163	70
2	135	65	12	139	67
3	136	65	13	122	63
4	137	64	14	134	68
5	148	69	15	140	67
6	124	62	16	132	69
7	117	65	17	120	66
8	128	70	18	148	68
9	143	71	19	120	67
10	129	62	20	152	67

(6 marks)

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