



AJEENKYA

D Y PATIL UNIVERSITY

End Term Examinations (December 2018)

School : SOM-ICRI Program: BBA Aviation/ Logistics and Supply Chain Management

Course: Business Mathematics Course Code: COM103

Semester: First Max Marks: 50 Duration (mins) : 120 mins

- Note :
1. Attempt ANY FIVE full Questions OUT OF SEVEN
 2. Figures to the right indicate FULL MARKS.

Q1. The following table shows the distribution of wages in a certain factory. Calculate mean, mode and median. (10)

Weekly Wages (X)	Number Of Employees (F)
20-40	8
40-60	12
60-80	20
80-100	30
100-120	40
120-140	35
140-160	18
160-180	7
180-200	5

Q 2. For a certain examination 3 tests were conducted and following results were obtained.
 35% failed in test 1,
 20% failed in test 2,
 25% failed in test 3,
 10% failed in both tests 1 and 2,
 5% failed in both 1 and 3,
 8% failed in both tests 2 and 3,
 And 2 % failed in all three tests.

If a student is selected at random find: (10)
 a. Probability that the student has failed in either of the 3 tests.
 b. Probability that the student has passed in all the 3 tests.

Q 3. Calculate Karl Pearson's coefficient of correlation between expenditure on advertising and sales from the data given below. (10)

Advertising expenses ('000 Rs.) : 39 65 62 90 82 75 25 98 36 78
 Sales (lakh Rs.) : 47 53 58 86 62 68 60 91 51 84

Q 4.A) A psychologist wanted to compare two methods A and B teaching for intelligence test. He selected a random sample of 22 students. The marks obtained by them are tabulated below: Find the Rank Correlation Coefficient. (5)

A	24	29	19	14	30	19	27	30	20	28	11
B	37	35	16	26	23	27	19	20	16	11	21

Q 4.B) The following table shows the area in millions of sq. km, of oceans of the world. Draw a pie diagram to represent the data. (5)

Ocean	Area (million sq. km)
Pacific	70.8
Atlantic	41.2
Indian	28.5
Antarctic	7.6
Arctic	4.8

Q 5. Calculate the trend values by the method of moving average, assuming a four yearly cycle, from the following data relating to sugar production in India: (10)

Year	1971	1972	1973	1974	1975	1956	1977	1978	1979	1980	1981	1982
Sugar Production (tonnes)	37.4	31.1	38.7	39.5	47.9	42.6	48.4	64.6	58.4	38.6	51.4	84.4

Q 6. A) The following table gives the distribution of monthly income of 600 families in a certain city. Draw a 'less than' and 'more than' ogive curve for the data. (5)

Monthly Income	Below 75	75-150	150-225	225-300	300-375	375-450	450 and over
No. of families	60	170	200	60	50	40	20

Q 6. B) Draw the Venn diagram for the following data: (5)

- a. 'Only B'
- b. A' (A not)
- c. (AUB)'
- d. A and B are mutually exclusive
- e. (B)

Q 7. A) Calculate compound interest: (5)
 Deposit: Rs. 10,000,
 Period: 3 years,
 Rate of interest: 10% p.a.

- (i) Compounded annually
- (ii) Compounded half yearly.

Q 7.B) Explain the following terms: (5)

- (i) Internal rate of return
- (ii) Annuities
- (iii) Mortgages
- (iv) Sinking fund
- (v) Present value.