
UTTARAKHAND OPEN UNIVERSITY, HALDWANI (NAINITAL)



उत्तराखंड मुक्त विश्वविद्यालय हल्द्वानी (नैनीताल)

Programme Name-MBA-First Semester/DIM-First Semester

Programme Code- MBA-17/DIM-17

Course Name-Quantitative Techniques in Management

Course Code-MS-104

Maximum Marks-20

Session - 2017-18, Summer Last Date of Submission: 31st October 2017

Session - 2017-18, Winter Last Date of Submission: 30th April 2018

Section-A

Section 'A' contains 08 short answer type questions of 2.5 marks each. Learners are required to answer 4 questions only. Answers of short answer-type questions must be restricted to 250 words approximately.

Answer the following(1-8) –

1. Represent the following data in the form of a frequency distribution:

| | | | | | | | |
|--------------|---|----|----|----|----|----|----|
| Less than | 0 | 10 | 15 | 25 | 40 | 55 | 70 |
| No. of Items | 0 | 10 | 15 | 25 | 40 | 55 | 70 |

2. From the following data calculate interquartile range, quartile deviation and coefficient of QD:

48, 45, 54, 43, 51, 49, 38, 41, 37, 42, 46

3. What are the tests of skewness?
4. What is meant by Correlation?
5. Find the mean and the variance of the following probability distribution:

| | | | | |
|------|---|-----|-----|-----|
| X | 2 | 3 | 4 | 5 |
| P(x) | 0 | 0.4 | 0.1 | 0.5 |

6. The standard deviation of a Poisson distribution is 3. Find the probability of getting 3.
7. What do you understand by integer linear programming problem?
8. Elaborate Decision Theory Approach.

Section-B

Section 'B' contains 04 long answer-type questions of 05 marks each. Learners are required to answer 02 questions only.

1. Find the values of median, first quartile, third quartile, D_9 and P_{16} from the following data:

| | | | | | | | | | |
|----------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Class Interval | 11-15 | 16-20 | 21-25 | 26-30 | 31-35 | 36-40 | 41-45 | 46-50 | 51-55 |
| Frequency | 8 | 15 | 39 | 47 | 52 | 41 | 28 | 16 | 4 |

2. Compute the coefficients of Skewness and Kurtosis based on moments for the following distributions:

| | | | | | | | | | | |
|---|-----|------|------|------|------|------|------|------|------|------|
| X | 4.5 | 14.5 | 24.5 | 34.5 | 44.5 | 54.5 | 64.5 | 74.5 | 84.5 | 94.5 |
| F | 1 | 5 | 12 | 22 | 17 | 9 | 4 | 3 | 1 | 1 |

3. A company wants to assign five salespersons to five different regions to promote a product. The expected sales (in thousand) are given below:

| | | Regions | | | | |
|--------------|----|---------|----|-----|-----|----|
| | | I | II | III | IV | V |
| Salespersons | S1 | 27 | 54 | 37 | 100 | 85 |
| | S2 | 55 | 66 | 45 | 80 | 32 |
| | S3 | 72 | 58 | 74 | 80 | 85 |
| | S4 | 39 | 88 | 74 | 59 | 72 |
| | S5 | 72 | 66 | 45 | 69 | 85 |

Solve the above assignment problem to find the maximum total expected sales?

4. Consider the data of a project as shown in the following table :

| Activity | Normal time (weeks) | Normal cost (Rs) | Crash time (weeks) | Crash cost (Rs) |
|----------|---------------------|------------------|--------------------|-----------------|
| 1-2 | 9 | 500 | 8 | 600 |
| 1-3 | 7 | 800 | 6 | 1100 |
| 1-4 | 8 | 900 | 6 | 1200 |
| 2-5 | 6 | 850 | 5 | 950 |
| 3-4 | 10 | 1200 | 8 | 1400 |
| 4-5 | 4 | 700 | 3 | 870 |
| 5-6 | 5 | 1000 | 4 | 1200 |

If the indirect cost per week is Rs 160, find the optimal crashed project completion time.