| Day: | Wednesday | **W-2018-0776** | Time: 12.00 NOON TO 02.00 PM |
|---|---|---|---|
| Date: | 17/10/2018 | | Max. Marks: 40 |

**N.B.:**
1) All questions are **COMPULSORY**.
2) Figures to the right indicate **FULL** marks.
3) Use of logarithmic table and pocket **CALCULATOR** is allowed.

**Q.1** Attempt any **TWO** of the following: **(10)**

a) Describe the scope of statistics in Industry and Insurance.

b) Draw less than cumulative frequency Curve for the following frequency distribution. Also find median graphically.

| Class | 30-60 | 60-90 | 90-120 | 120-150 | 150-180 | 180-210 |
|---|---|---|---|---|---|---|
| Frequency | 42 | 74 | 102 | 98 | 42 | 26 |

c) Obtain mean and mode for the following frequency distribution.

| Class | 05-15 | 15-25 | 25-35 | 35-45 | 45-55 |
|---|---|---|---|---|---|
| No. of students | 30 | 64 | 60 | 70 | 40 |

**Q.2** Attempt any **TWO** of the following: **(10)**

a) Write notes on Simple random sampling with replacement (SRSWR) and simple random sampling without replacement (SRSWOR).

b) Obtain quartile deviation (Q. D.) for the following frequency distribution.

| Distance (in kms) | 40-45 | 45-50 | 50-55 | 55-60 | 60-65 |
|---|---|---|---|---|---|
| No. of cars | 10 | 17 | 23 | 40 | 10 |

c) The following data pertain to two workers doing the same job in a factory.

| | Worker A | Worker B |
|---|---|---|
| Mean time to complete a job | 40 | 42 |
| Standard deviation | 8 | 6 |

Which is more consistent worker? Why?

**P. T. O.**

**Q.3**    Attempt any **TWO** of the following:    **(10)**

   **a)**  Define:
      i) Central moments         ii) Skewness

   **b)**  The first four moments about 5.2 are 0, 5.16, -2.3 and 60. Compute $\beta_1$ and $\beta_2$.

   **c)**  In a group of 200 students, 150 like Hindi films, 100 like English films and 80 do not like both the films. Find the number of students who like.
      i) only Hindi film        ii) film in only one language
      iii) no film.

**Q.4**    Attempt any **FIVE** of the following:    **(10)**

   **a)**  State the types of Kurtosis.

   **b)**  Define attribute and give illustrations.

   **c)**  Define sample with illustration.

   **d)**  Examine whether the following data is consistent or not.
      $N = 200, (A) = 150, (B) = 80, (AB) = 25.$

   **e)**  Find median and mode for the following data:
      24, 20, 22, 21, 22, 25, 27.

   **f)**  Obtain range and coefficient of range for the following data:
      102, 105, 95, 62, 110, 92, 115.

   **g)**  Obtain geometric mean of 2, 8, 20, 62, 54.

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