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BJ—07—2016

FACULTY OF COMPUTER STUDIES

B.Sc. (CS) (First Year) (Second Semester) EXAMINATION

OCTOBER/NOVEMBER, 2016

(Revised Course)

COMPUTER SCIENCE

(Fundamental of Statistics and Discrete Mathematics)

(Saturday, 19-11-2016)

Time : 10.00 a.m. to 1.00 p.m.

Time—3 Hours

Maximum Marks—80

N.B. :— (i) All questions are compulsory.

(ii) Figures to the right indicate full marks.

(iii) Attempt either A or B from Q. No. 2 to Q. No. 4.

(iv) Use of non-programmable calculator is allowed.

(v) Use suitable data if necessary.

1. Attempt the following : 20

(a) Explain scope of statistics

(b) Give the merits and demerits of median

(c) Explain primary and secondary data

(d) Explain path.

2. (A) Attempt the following :

(a) Explain pie diagram. 7

(b) Calculate mean and mode from the following data : 8

Class

Frequency

0—5

8

5—10

12

10—15

16

15—20

25

20—25

18

25—30

13

30—35

11

35—40

7

P.T.O.

Or

(B) Attempt the following :

- (c) Explain permutation and combination. 7
- (d) Calculate standard deviation from the following data : 8

Wages	Frequency
100—200	32
200—300	45
300—400	50
400—500	65
500—600	40
600—700	30
700—800	20

3. (A) Attempt the following :

- (a) Explain different measures of dispersion. 7
- (b) What is the probability that a leap year selected at random will contain 53 Sundays ? 8

Or

(B) Attempt the following :

- (c) Explain sets in detail. 7
- (d) If R be a relation on set of integers z defined by
 $R = \{(x, y) \mid x \in z, y \in z, (x - y) \text{ is divisible by } 6\}$
 then prove that R is an equivalence relation. 8

4. (A) Attempt the following :

- (a) Explain types of relation. 7
- (b) Explain graphs in detail. 8

Or

(B) Attempt the following :

(c) Explain Eulerian and Hamiltonian graphs. 7

(d) If $A = \{a, e, i, o, u\}$, $B = \{b, f, s, t, u, v\}$, $C = \{i, k, l, m, q, z\}$ and $U = \{a, b, c, \dots, z\}$ then find : 8(i) $(A \cup B) - (A \cap B)$ (ii) $A' \cup B'$ (iii) $(A - B) \cup (B - C)$ (iv) $(A \cup B) \cup C$.5. Write short notes on any *three* of the following :

15

(i) Frequency polygon

(ii) Importance of statistics

(iii) Venn diagram

(iv) Function, domain, range

(v) Isomorphism of graphs.