

(4)

Or

- (b) Calculate the standard deviation from the following data :

Marks in Economics	No. of students
0-10	5
10-20	12
20-30	15
30-40	20
40-50	18
50-60	10
60-70	6
70-80	4

4. (a) A bag contains 5 black and 7 white balls. A ball is drawn out of it and replaced in the bag. Then a ball is drawn again. What is the probability that (i) both the balls drawn were black, (ii) both were white and (iii) the first ball was black and the second ball is white.

$$4+4+3=11$$

Or

- (b) Explain with examples the concepts of the following : $2+2+2+2+3=11$

- (i) Sample space
- (ii) Equally likely events
- (iii) Mutually exclusive events
- (iv) Exhaustive events
- (v) Independent and dependent events

(5)

5. (a) Explain the following :

$$4+4+3=11$$

- (i) Census and sampling
- (ii) Testing and hypothesis
- (iii) Errors in hypothesis testing

Or

- (b) A sample of 400 students of undergraduate and 400 students of postgraduate classes was taken to know their opinion about autonomous colleges. 290 of the undergraduate and 310 of the postgraduate students favoured the autonomous status. Test that the opinion regarding autonomous status of colleges is independent of the level of classes of students. (Table value of χ^2 at 5% level is 3.84 for 1 d.f.)

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6. (a) Nine students obtained the following percentage of marks in the College Test (X) and in the Final University Examination (Y). Calculate the correlation coefficient.

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X	51	63	73	46	50	60	47	36	60
Y	49	72	74	44	58	66	50	30	35