(AUTONOMOUS)

MSc DEGREE EXAMINATION MAY 2018
(Third Semester)

Branch –**SOFTWARE SYSTEMS**
(Five year integrated)

STATISTICAL METHODS

Time: Three Hours Maximum: 75 Marks

Answer **ALL** questions
ALL questions carry **EQUAL** marks (5 x 15 = 75)

1 a Calculate the mean, median and mode from the following data :

Profits (Rs. Lakhs) :	0-30	30-60	60-90	90-120	120-150	150-180
Number of companies :	6	19	29	36	24	10

OR

b Find the standard deviation from the following distribution :

Age under :	10	20	30	40	50	60	50	60
No. of persons dying :	16	32	56	78	110	120	128	140

2 a Calculate the Karl Pearson's coefficient of correlation from the following :

Marks in Maths :	40	45	48	50	44	38	50
Marks in Statistics :	45	40	38	49	46	45	55

OR

b i) State and prove multiplication theorem on probability.

ii) Explain binomial and normal distributions.

3 a i) Explain the test for single mean in case of large samples.

ii) Two types of batteries X and Y are tested for their length of life and the following results are obtained :

Battery	Sample Size	Mean hours	Variance hours
X	35	2000	186
Y	40	2150	128

Can you conclude that the two types of batteries are having the same mean life?

OR

b i) Write a short note on test for single proportion.

ii) Explain the test for two proportions and two standard deviations.

4 a Two random samples drawn from two normal population are :

Sample I :	20	22	26	27	33	38	40
Sample II :	27	33	42	35	32	30	

Test whether the two populations have the same variances.

OR

b The following table gives the retail process of a commodity in some shops selected at random in four cities.

A :	22	24	29	30	3
B :	21	20	24	28	35
C :	20	24	26	30	
D :	28	30	34	36	32

Carryout the analysis of variance and comment on the result.

Cont...

5 a A milk producer's union wishes to test whether the preference pattern of consumers for its product is dependent on income levels. A random sample of 518 individuals gives the following data :

	Product preferred		
Income level	Product A	Product B	Product C
Low	172	32	82
Medium	52	27	62
High	22	12	57

Can you conclude that the preference patterns are independent of income levels?

OR

b Describe run test and Mann – Whitney U – test.

Z-Z-Z END