## LOYOLA COLLEGE (AUTONOMOUS), CHENNAI - 600 034

**B.Sc.**DEGREE EXAMINATION – **COMPUTER SCIENCE** 

THIRD SEMESTER – NOVEMBER 2018

CA 3201/ CS 3204 - STATISTICAL METHODS

Date: 26-10-2018 Time: 01:00-04:00 Dept. No.

Max.: 100 Marks

**Answer ALL questions:** 

## **SECTION A**

(10 X 2 = 20 Marks)

- 1. The mean of marks in statistics of 100 students of a class was 72. The mean of marks of boys was 75 while their number was 70. Find out the mean marks of girls in the class.
- 2. Find range for the following data: 75, 80, 98, 95,68, 40
- 3. State theaxioms probability
- 4. Two dice are tossed .What is the probability that the sum of the two dice is divisible by 3 or 4?
- 5. In a factory, there are 6 skilled workers and 4 unskilled workers. What is the probability that the two workers selected are skilled?
- 6. State any two properties of binomial distribution.
- 7. Define the conditional probability.
- 8. Explain different types of probability sampling.
- 9. A random variable X has the following probability function

Value of X	-2	0	2
P(X=x)	0.4	0.6	0.3

Find  $E(X^2)$ .

10. Define normal distribution.

#### **SECTION B**

# Answer any FIVE questions:

#### (5 X 8 = 40 Marks)

11. (a) Calculate the mean for the following data.

Class Interval	10 - 20	20 - 30	30 - 40	40 - 50	50 - 60	60 - 70	70 - 80
Frequency	10	15	12	14	16	9	5

(OR)	

(b) Find the standard deviation and coefficient of variation for the given data:

Age(Years)	25-30	30-35	35-40	40-45	45-50	50-55
No. of workers	70	51	47	31	29	22

12. (a) Find the correlation coefficient between production and sales of a factory from the data given below:

Production(in tones)	6	14	12	15	9	6	7	9	6	8
Sales (in Rs.)	4	10	6	9	6	9	8	12	9	7
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(OR)

(b)Out of 8000 graduates in a town, 800 are females and out of 1600 graduates employees 120 are female. Use chi-square test at 5% level to determine if any discrimination is made in appointment on the basis of sex.

13.(a)The life of a cer												
	tain kind	of ele	ctron	ic d	levic	e ha	s a n	nean	of	300 1	hour	rs and standard
deviation 25 nours .												red to the nearest
hour can be approxim	-											
these devices will have		-								-		
life time from 220 ho									<i>,</i>	1		C
					(0	R)						
(b)What is probabilit	ty samplir	ng? Exp	lain (	diffe	rent	type	s of p	robal	bility	/ sam	plin	g.
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Value of X	-3	-2	-1		0		1		2	3		
p(x)	1⁄4 1/	6	1/5		1/4	ł	1/3	1	/ 7	1/	2	
					(0	R)		·				
(b) Calculate the fo	ur momer	nts abou	it me	an fe		,	owing	g dat	a.			
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		5 6										
f 1	1 3 7	3 1										
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(b) ) Find mean and v	variance of	f the Ga	amma	a dis	tribu	tion.						
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