Seat No: \_\_\_\_\_

## PARUL UNIVERSITY

Enrollment No: \_\_\_\_\_

FACULTY OF COMMERCE M.Com. (Hons) Winter 2019 – 20 Examination

Semes Subje Subje	ster: 3 ct Code: 16 ct Name: Q	5201205 Duantitat	ive Techn	iques for ]	Financial 1	Decision	Examina	Date: Time: Total	29/11/2019 10:30am to 01:00pm Marks: 60
Instru 1. All 2. Figu 3. Mal 4. Star	actions: questions a ures to the r ke suitable a t new quest	re compu ight indic assumptio tion on ne	llsory. cate full ma ons wherev ew page.	arks. ver necessa	ıry.				
Q.1 A)	Do as dire Multiple c	cted: hoice qu	estions: (I	Each of on	e mark)				(06)
1.	If Mean ( $\frac{1}{2}$ (a) 0	$\bar{X}$ )=3 and	d Mode (Z (b) -3	(z)=3 then $z$	Median (M (c) 3	[)=	? (d) None of	of these	
2.	$\begin{array}{c c} \text{The mode} \\ \hline x_i & 0 \\ \hline f_i & 12 \\ \end{array}$	of the fol           1         2           20         10	lowing dat           3         4           0         6         2	ta is					
3.	(a) 10 The coeffic	cient of c	(b) 20 orrelation	r =	(c)10		(d) 6		
4.	(a) $\pm \sqrt{b_{yx}}$ The value	$\frac{1}{b_{xy}} + b_{xy}$	(b) = 1	$b_{yx} * b_{xy}$	(c) <sup>±</sup>	$\sqrt{b_{yx}-b_x}$	,y (d)	$b_{yx} * b_{xy}$	
	(a) $\frac{10\sqrt{\lambda^3}}{3}$	- +k	(b) $\frac{12\sqrt{3}}{3}$	$\frac{\lambda^3}{k}$ +k	(c) $\frac{10}{10}$	$\frac{\lambda^3}{4}$ +k	(d) $\frac{9}{-}$	$\frac{\sqrt{\lambda^3}}{2}$ +k	
5.	$\int_{0}^{1} x^{2} dx =$ (a) $\frac{1}{2}$	<u></u>	(b) $\frac{1}{2}$		$(c)\frac{1}{4}$		(d) Non	e of these	
6.	Mean of 2, (a) 3	,2,3,4,4 is	(b) 2		(c) 6	ō	(0	l) 15	
<b>B</b> )	Do as dire	cted: (Ea	ach of one	mark)					(06)
1. 2	A fair diag	pected M	n Eind the	alue	r, of acttin	a on otton .	numb an?		
2. 3	A fair dice	ns throw	lom compl	probabilit ing	y or getting	g an even i	number?		
З. Л	Spearman'	s rank co	orrelation c	nig. oefficient i	r—				
4. 5	Define: Co	s raik co			L—	·			
5. 6	The Norma	al distrib	ition is a		shaped	curve			
0.2	Do as dire	cted: (Ea	ach of 04 1	nark)		cui vev			(12)
1.	Find the m	ode of th	e followin	g:					()
	Class	0-10	10-20	20-30	30-40	40-50	50-60	60-70	
	$f_i$	5	9	11	13	10	7	2	
2	Write Mor	its and D	amarita of	Sompling					

- Write Merits and Demerits of Sampling. 2.
- 3. (i) Write the cumulative frequency.

Х	79	59	65	40	64	52	53	57
f	3	4	5	7	4	8	6	3

(ii) Evaluate  $\int x \cdot \sin x \, dx$ 

Х	6	7	8	9	10	11	12
F	3	6	9	13	8	5	4

- 2. The following data regarding the heights (y) and weights (x) of 100 college students are given:  $\sum x = 15000, \quad \sum x^2 = 2272500, \quad \sum xy = 1022250, \quad \sum y = 6800, \quad \sum y^2 = 463025 \text{ Find}$ the coefficient of correlation between height and weight and also the equation of regression of height and weight.
- 3. For the following pay-off matrix find the best act using (i) Maximin principle (ii) Maximax principle (iii) Laplace principle

Event	Act						
	$A_1$	$A_2$	$A_3$	$A_4$	$A_5$		
<i>S</i> <sub>1</sub>	10	25	10	15	20		
<i>S</i> <sub>2</sub>	-5	10	-5	10	-5		
$S_3$	15	5	10	10	10		

4. (i) A card is drawn from a pack of well-shuffled cards. Find the probability of following events:

A] The card drawn is a spade.

B] The card drawn is a king.

C] The card drawn is a face card. D] The card drawn is not a club.

(ii) Three unbiased coins are tossed. Find the probability of getting A] exactly 2 heads B] at least one tail

## Q.4 Answer the following: (Any two)

- 1. (a) The mean and standard deviation of a Binomial distribution are 5 and 2. Determine the distribution.
  - (b) If the mean of a Poisson variable is 1.8, find (i) P(x>1) (ii) P(0<x<5) if  $e^{-1.8} = 0.165$
- 2. (a) Find the Coefficient of rank correlation of the following data:

x	35	40	42	43	40	53	54	49	41	55
У	102	101	97	98	38	101	97	92	95	95

## (b) Explain: Positive correlation, Negative correlation, Simple correlation, Multiple correlation

3. (a) Represent the following problem by decision tree and decide the best act from minimum cost.

Probability of fire	To take insurance	Not to take insurance
0.01	Rs. 100	Rs. 8000
0.99	Rs. 100	Rs. 0
	Probability of fire 0.01 0.99	Probability of fireTo take insurance0.01Rs. 1000.99Rs. 100

(b) Find (i)  $\frac{d}{dx}(x^3 \cdot \sin x)$  (ii)  $\int (3x^2 + 5x - 7) dx$ 

(18)