**REV-00** BCM/05/10

### **BACHELOR OF COMMERCE Third Semester Business Statistics** (BCM-11)

Duration: 3Hrs.	Full Marks: 70
(PART-B: Descript	ive)
Deration: 2 hrs. 40 mins.	Marks: 50
1. Answer the following questions: (any five)	2×5=10
<ul> <li>a) Distinguish between relative frequency and cur</li> <li>b) If A, B and C are any three events write down t following events.</li> </ul>	
(i) Only A occurs.	(ii) One does not occur
(iii) Simultaneous occurrence of three events.	(iv) At most two occur.
c) Prove that $AM \ge GM \ge HM$	
d) Define Mutually Exclusive events with an exan	nple.
e) What is cyclical variation?	
f) Define correlation coefficient?	

2. Answer the following questions: (any five)

a) From the following series trace out the missing frequencies if its median is 27.5 and number of items is 50.

Marks	0-10	10-20	20-30	30-40	40-50	50-60
frequency	4	?	20	?	7	3

b) Two dice are tossed. Find the probability of getting an "even number on the first die or a total of 8".

c) The two lines of regression are given as X+2Y-5=0 and 2X+3Y=8. Then find the mean of X and Y and  $b_{yx}$  (regression coefficient of y on x)

2014/03

3×5=15

	1214.0	2000	2004		
Commodity	Price	Value	Price	Value	
A	10	100	12	96	
В	8	96	8	104	
С	12	144	15	120	
D	20	300	25	250	
Е	5	40	8	64	
F	2	20	4	24	
				a a a a a a a a a a a a a a a a a a a	
			asseith Re	interferences and set	

*d)* Calculate Fishers ideal index from the following data and show that it satisfies Time Reversal Test.

e) Find four yearly moving average from the following data

Year: 1970 1971 1972 1973 1974 1975 1976 1977 1978 1979 1980 1981 1982

Production	n: 12	14	16	13	16	19	20	22	23	21	24
	25	27									

(in Thousand ton)

f) If A and B are two independent events prove that  $\overline{A}$  and B are also independent.

5×5=25

# **3. Answer the following questions:** (any *five*)*a)* Represent the following by subdivided bar diagram.

Particulars	2010	2011	2012	
1. Cost per				
chair	90	150	210	
a) wages	60	100	140	
b) Other costs	30	50	70	
c) polishing	180	300	420	
Total				
2. Proceeds per	200	300	400	
chair	ा तह हतःमध्य ।	to Gindeadad en		1.44
			- A 10 0001 A	
3. Profit(+)	+20		-20	
Loss (-)	A RO- MEDICIDI	oo maraafaa ah		

*b)* Following is the distribution of marks obtained in certain subject by the students of Baridua College. Find (i) median (ii) First quartile (iii) Third quartile (iv) Seventh decile and (V) 42 nd percentile.

Marks	0-10	10- 20	20- 30	30- 40	40- 50	50- 60	60- 70	70- 80	80- 90
No. of students	2	10	22	35	46	50	30	12	5

c) Find the line of regression of y on x from the following data:

Х	5	10	15	25	30	35	40	45
Y	25	32	44	32	39	49	55	60

What will be the value of y for x = 48? Also find the value of r (correlation coefficient).

- *d)* Discuss the problems of selection of base period and commodities for construction of price index number.
- *e)* Write the probability mass function of Binimial Distribution. Deduce mean and variance of the distribution.
- f) What are the components of time series? Discuss them with examples and mention their uses.

REV-00 BCM/05/10

## BACHELOR OF COMMERCE Third Semester Business Statistics (BCM-11)

(The figures in the margin indicate full marks for the questions)

**Duration: 20 minutes** 

Marks - 20

2014/03

## **PART A- Objective Type**

(One mark for each question)

Attempt all the questions. There are four alternatives for each question. Select the correct option.

If A and B are mutually exclusive events then P (AUB) =? b) P(A) - P(B) c) P(A) + P(B) - P(AB)a) P(A) + P(B)d) None of these 2. A bag contains 2 red, 2white and 2 black balls. What is the probability of drawing 2blue balls? a)1/6 b) 1 c) 0 d) None of these 3. Frequencies which occur repeatedly in a test score are called a) Mean b) Median c) Mode d) None of these 4. Geometric mean of 2, 4 and 8 is b) 3 d) None of these a)2 c) 4 5. The algebraic sum of deviations of a set of n values from their arithmetic mean is b)0 d) None of these a) n c)1 6. The point of intersection of the 'less than' and the 'more than' ogive corresponds to a) The mean b) The median c) the geometric mean d) None of these 7. If E and F are two events such that P(E) = 1/4, P(F) = 1/2 and P(E and F) = 1/8 then P(E or F) = ?b) 3/8 c) 5/8 d) None of these a) 2/8 8. If  $b_1$  and  $b_2$  are two regression coefficients then correlation coefficient is c)  $\sqrt{(b1x b2)}$ b)  $b_1 x b_2$ a) $b_1 + b_2$ d) None of these

9. When Two	o variables are uncorre	lated then r=?		
a) 1		b) -1	c) 0	d) None of these.
10 Sum of a	absolute deviations abo	out median is		
a)Least		b) Greatest	c) Zero	d) None of these
<b>11.</b> If a va obtained		nt values at different	t points of time then the	series of values does
a) A.P se	eries	b) G.P series	c) time series	d) None of these.
12. If A & B	are two events associa	ted to a random experin	ment such that $A \subset B$ then	Solution of Contract, P
a) P (A)≤	$\leq P(B)$	b) $P(A) \ge P(B)$	c) P(A) = P(B)	d) None of these
13. If one of t	the regression co-effici	ients is $>1$ , then the oth	ier must be	0
a) = 1		b) < 1	c) = 0	d) None of these
14. When r=	r + 1 or $r = -1$ , the lines of	of regression		
a) coincid	de	b) Parallel	c) Perpendicular	d) None of these
<b>15.</b> If $r_{xy} = 0.6$	6 and $b_{xy}=0.8$ , what is	the value of $b_{yx}$		in the fitter of the fitter
a)0.45		b) 0.46	c) 0.55	d) None of these
16. The mean	n and variance are equa	al for the		and an and a second second
a) Norma	al distribution	b) Binomial distribution	ion c) Poisson distributio	on d) F-distribution.
	ficient of correlation is			i i
	e of scale only		nge of origin only	C 1
			ther change of origin nor chang a to increase or decrease over a	
		far tendency of the and	to increase of decrease erres	1 v. asen antonias), i - i
	iod of time.	¢ ()		
a) Secula		b) Seasonal variation	CODING IN TO 120 M TO STOOL STOOL	d) none of these
19. In a histog	gram the height of the	rectangles are always _	to the respective	×
Class in	terval.			
a) Propor	rtional	b) Reciprocal	c) Equal	d) None of these
<b>20.</b> Mode =	- 2 mean.			

\*\*\*\*

1