F.Y.BBI - Sem I - A.T.K.T. Exam - Mar 2023

Q.M.-I Dt:- 21/3/23

NOTE: 1. All Questions are compulsory. Marks:75
2. All questions carry equal marks. Time:2 ½ hrs

Q.1A.Choose correct option(Any eight)

1. Median of 21,23,27,29,25 is _____
c)23 b)27 c)29 d)25

2. Mean of the five observation is 60 what is $\sum x$?
a)12 b)300 c)275 d)20

3.If two variable moves in opposite direction, there is _____correlation between them.
a)zero b)positive c)negative d)perfect positive

4.Range is determined by _____point from given data.
a)3 b)2 c)4 d)1

5.We use regret table for _____criterion
a) maximax b)minimax c)maximin d)Minimin

6. What is empirical relationship between mean, median and mode?
a) mean=3mode-2median b) mode=3median-2mean
c) median=3mean-2mode d) median=mean-mode

7. Decile refers to division of series into _____parts
a)10 b)12 c)4 d)16

8. Complimentary events are:
a)Mutually Exclusive b) Mutually Exhaustive
c) Mutually dependant d) Mutually Virtual

9. Let 2x+3y = 6 be the regression equation x on y. The value of b_{xy} is equal to
a)1.5 b)-1.5 c)-3 d)3

10. If the two lines of regression are perpendicular to each other, the correlation coefficient r=___ is:
a)0 b)1 c)-1 d).5

B State whether the following statements are true or false(Any seven)
1.The arithmetic mean of 2,3,4 is 4.
2.Range is difficult to calculate.
3.The circle in decision tree represents various state of nature.
4.Cost of living number uses Laspeyre's formula for aggregative method.
5.Frequency of value in any distribution is nonnegative.
6.value of probability is between o and 1.
7.Decision maker has always control over the occurrence of situation
8.Regression analysis is used to determine cause and effect of relationship.

9.If bxy and byx is positive then r is also positive.
10. Median is third quartile.

Q.2 A.Draw multiple bar diagram for the following.

Year	Income company A	Income of company B
2000	4500	5000
2001	5200	6500
2002	4000	3800
2003	5100	5000

B.1)Average daily wages of all 90 workers in a factory is 60.An average daily wages of female worker is 45.calculate an average daily wages of male workers if one third workers are male.

2) The mean salary of 1000 employee was Rs.541. Later on after payment of salary, it was found that the salary of two employees was wrongly entered as Rs.891 and Rs.495. Their correct salary was Rs. 591 and Rs.555 Find correct A.M.

OR

C. Miss. UVR is an aircraft maintenance supervisor. A recent delivery of bolts from a new supplier caught the eye of a clerk. She sends 25 of the bolts to a testing lab to determine the force necessary to break each of the bolts. In thousands of pounds of force the results are as follows
147.8 137.4 125.2 141.1 145.7 119.9 133.3 142.3 138.7 125.7 142.o 130.8 129.8
141.2 134.9 125.0 128.9 142.0 118.6 133.0 151.1 125.7 126.3 140.9 138.2
Prepare the frequency distribution by taking class interval as 118-122, 122-126, Hence calculate mean, median, mode.

Q3.A.The score of two batsmen A and B in ten innings during certain season are as under which of the batsmen is more consistent?(use standard deviation)

A	32	47	63	71	39	10	60	96	14	28
B	19	31	48	53	67	90	10	62	40	80

B. Calculate the Quartile deviation and coefficient of quartile deviation for following data.

Class	0-10	10-20	20-30	30-40	40-50	50-60
Frequency	3	7	15	12	8	5

OR

C. expenditure on entertainment in a locality gave the following results: -

	Average	Standard deviation
Expenditure on cloths	300.00	20.00
Expenditure on entertainment	100.00	15.00

Coefficient of Correlation r = 0.78

Find the regression of expenditure on entertainment related to expenditure on cloths.
Estimate the expenditure on entertainment of a person who spends Rs.380 on cloths.

D. Calculate Karl Pearson's correlation coefficient for the following.

i) PRICE (Rs): 8	10	15	17	20	22	24	25
SUPPLY (Rs): 25	30	32	35	37	40	42	45

Q.4.A.If a card is drawn at random from pack of 52 cards. What is the chance of getting i)A spade or a heart (ii)Ace of diamond (iii)A picture card (iv)Not an Ace

B. For the following data calculate:
(1) Laspeyre's Price index Number (2) Paasche's Index Number (3) Fisher's Index Number
(4) Dorbish-Bowley's Index Number

Commodity	Base year		Current year	
	Price	Quantity	Price	Quantity
A	6	50	9	55
B	2	100	3	125
C	4	60	6	65
D	10	30	14	25

OR

C.A bakery man has observe the following demand pattern for cakes produced in his bakery:

No.of cakes	20	21	22	23
Probability	0.05	0.25	0.30	0.40

B.Given the following pay-off table,find optimal decision using criterion(i)Maximin(ii)Maximax(iii)Laplace

Course of action	State of nature		
	S1	S2	S3
A1	35	100	38
A2	58	95	105
A3	45	30	91

Q.5A. Explain Scatter diagram
B: Explain properties of Arithmetic mean
OR

C. Write short notes (Attempt any three)
1. Frequency polygon
2.Index number
3.Types of event in probability
4.Histogram
5.Relatonship between coefficient of correlation and regression