THAKUR COLLEGE OF ENGINEERING AND TECHNOLOGY S. E. SEMESTER IV (CBCGS-HME 2020) MARCH 2022

Subject: Statistical Decision Making

Branch: AIML

Q.P. Code: B-46001

Total Marks: 60

(Time: 2 hours)

Instructions:

1. All Sections are compulsory.

2. Figures to the right indicate full marks.

3. Assume suitable data if necessary and state the assumptions clearly.

Section-I	(08 Marks)	
Q. No.	Multiple choice question (Answer any 08 questions out of 10)	Marks
1	Population value is called-	1
	(i) Parameter (ii) Statistics (iii) Variable (iv) data	
2	Which of the following is not a non-probability sampling?	1
	Judgmental Sampling (ii) Convenience sampling (iii) Quota sampling (iv) Cluster sampling	
3	Which of these distribution is used for testing of hypothesis?	1
	(i) Normal distribution (ii) Chi-square distribution (iii) Gamma distribution (iv) Poisson distribution	
4	Which of the following statement is true about the type II error? (i) Type two error means to accept an incorrect alternative hypothesis (ii) Type two error means to reject an incorrect alternate hypothesis. (iii) Type two error means to accept a correct alternate hypothesis. (iv) Type two error means to reject a correct alternate hypothesis.	1
5	A t-test is a significance test that assesses (i) The means of two independent groups. (ii) The medians of two dependent groups. (iii) The modes of two independent groups. (iv) The standard deviation of 3 independent variables.	1
6	Which of the following statement is true about the regression line? (i) A regression line is also known as line of average relationship. (ii) A regression line is also known as line of estimating variables.	1

	(iii) A regre	ession line is also k	nown as line of r	oredicting equation.	
		he above.	no viii us iiilo oi p	nouteming oquation.	
7	Which of the follo	wing is true for the	coefficient of co	orrelation?	1
	The coeffi	cient of correlation	is not dependent	t on the change of scale.	
	(ii) The coeffi	cient of correlation	is not dependent	on the change of origin.	
		icient of correlatio change of origin	n is not depende	nt on both the change of	
	(iv) None of the				
8	The meaning of lea		guarantees that-	Targeteral for	1
				at shape is used to model	
	the data.	is the least value	egardiess of wha	at shape is used to model	
				the forecasting equation.	
	(iii) The sum o		of deviations of	the trend from the actual	
			squared should gi	ve the least amount.	
)	The level of signif	icance can be view	ved as the amour	nt of risk that an analyst	1
	will accept when m		ved as the amoun	it of fisk that all allaryst	
	Stateme	nt is true			
		nt is false.			
	()	nt is neither true no			
		nt is not satisfactor			
10	Given below is a stresearch project:	ummary of ANOV	A for four group:	s of students tested in a	1
		Sum of Squares	Degree of	Mean sum of	
	Source of Variance	Sum of Squares	freedom	Squares	
		76	3	23.33	
	Between groups		The property of the second	· · · · · · · · · · · · · · · · · · ·	
	Within groups	122	16	7.62	
	What will be the val				
	(i) 76/122 ((ii) 3/16 (iii) 23.	.33/7.62 (iv) 7	.62/23.33	
ection-	II (12 Marks)				
	Objective questions(A Calculate the correla	nswer any 4)	h the help of follo	wing data using Karl	3
	Calculate the correla	tion coefficient with	I the help of force		

	Pearson's co-co					A STATE OF THE STA
,	Pearson's coeff	icient of correla	ation method.	8078-17		
		x=65,	$\sum_{x} y = 125, \sum_{x} (x - \bar{x})$	$-\bar{x})^2 = 160$	100	
		T32		100		
		$\sum (y-\bar{y})^2$	$= 358, (x - \bar{x})$	$(y-\bar{y})=23$	6	
	Many casin		The West Property of			
	the machine is	use card-dealin	g machines to dea	l cards at rand	om. Occasionally,	3
	conduct the te	et 1500	re an equal likelih	ood of dealing	om. Occasionally, g for each suit. To	3
	were observed	cards	are dealt from the	machine and	g for each suit. To following results	41
		Spades			land was a second	
	Observed	402	Diamonds	Clubs	Hearts	
	Expected	275	358	273	467	
	Calculate χ^2_{cal}	from the	375	375	375	
	· · · · ·	cutate non the	above data.		经国际公司	
	An ambulance	Service alai				
/	destination in	emergency of	calls To observe	n average 8.9	minutes to reach its	3
	-recition offillibili	ance com-		VILLO CIAIIII.	IIIP agency which	
	1	minuted well		ion of 1	ncy calls, getting a ainutes. To get the	
	conclusion ov	er it calculate	Z value.	1011 OI 1.6 m	inutes. To get the	
	A sample of 8	pens from a	normal population	Was talean I	was found that sum	
	pens is 102 c	of deviations	from the mean is	84.4 and far	was found that sum another sample of 10	1 3
	pens is 102.6.	Calculate F-1	from the mean is test ratio from the	data	another sample of 10)
		1 01				
/	the following	d of least squa	are, find the straig	ht line $y = a$	L has the state of	
/	the following	d of least squa data:		ht line $y = a$	+ bx that best fits	3
/	IA	1	2 3			3
/	Y	1 14	2 3	4	5	\neg
/	Y The average	14	2 3 27 40	55	5 68	
/	The average is known the	1 14 height of a ra	2 3 27 40 ndom sample of	4 55 400 people fro	5 68 om a city is 1.75 m	
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