

MS-9534

Seat No.

Third Year B. Physiotherapy Examination January - 2018

Biostatistics & Research Methodology

Time: 2 Hours] [Total Marks: 50

Instructions: (1) All questions are compulsory.

- (2) Figures in parenthesis to the right show the full marks of each question.
- 1 Write comprehensive notes on any TWO of the following: 20
 - (a) Characteristics of normal distribution curve
 - (b) Randomized controlled trial
 - (c) Types of correlation
- 2 Calculate any TWO of the following:

10

- (a) A study was carried out by a postgraduate student to know the association between age of mother and congenital malformations. It was seen that, out of the 500 children born to women > 35 years, 50 had congenital malformations, while out of 1000 women < 35 years, there were 50 children born with congenital malformations. Interpret this data using appropriate statistical test. Write your inference in simple language.
- (b) Serum Cholesterol levels of 10 subjects are as under: 240, 290, 245, 272, 288, 250, 263, 277, 255, 260 Calculate the mean and standard deviation with the help of assumed mean.
- (c) Thirty micrograms of Vitamin B_{12} were given intramuscularly every fourth week to six patients of pernicious anemia during period of remission. The results are given below. Do the data indicate real improvement in hemoglobin level?

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Hemoglobin gm									
Individual Number	Before therapy	After 3 months therapy							
1	12.2	13.0							
2	11.3	13.4							
3	14.7	16.0							
4	11.4	13.6							
5	11.5	14.0							
6	12.7	13.8							

3	Write	in	two-three	sentences	any	FIVE	of t	the	following	:	10
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- (a) Random Sampling
- (b) Quantitative data
- (c) Cohort Study
- (d) Standard deviation
- (e) Mode
- (f) Pie diagram

4	Write most appropria	e single	answer	in below	mentioned	10
	MCQs:					

(1) In a study of cholera, the incubation periods obtained were 2, 5, 8, 10, 25, 10 and 30.

The median is calculated to be

(a) 50

(b) 22.5

(c) 10

- (d) 5
- (2) Relationship between two variables can be presented by:
 - (a) Pie diagram
- (b) Scatter diagram
- (c) Bar diagram
- (d) Histogram
- (3) Measure of dispersion is:
 - (a) Mean
- (b) Mode
- (c) Standard deviation (d) Median
- (4) In a standard normal curve the area between one standard deviation on either side will be:
 - (a) 68%

(b) 95%

(c) 97.5%

(d) 100%

(5)		3×4 condom equals		tabl	e, the	numbe	er of o	degrees	of
	(a)	2		(b)	5				
	(c)	6		(d)	12				
(6)	` '	test the sign	nificance	` ,		ce betw	veen n	neans of	the
(0)		ple for the					veen n		UIIC
		•	n	9	Mea	n	SD		
	Sam	ple A	100		50		4		
	Sam	ple B	150		51		5		
	Whi	ch test is n	nost suit	able?	•				
	(a)	Chi-square	etest						
	(b)	Z-test							
	(c)	t-test							
	(d)	Mann-Whi	tney test	t					
(7)	Mea	n weight o	f 100 chi	ildrer	n was	12 kg.	The s	standard	l
	devi	ation was 3	3. Calcul	ate t	he per	centag	e coef	ficient o	\mathbf{f}
	vari	ance.							
	(a)	20%		(b)	25%				
	(c)	33%		(d)	35%				
(8)		nean is 5 ai uld be	nd the S	D is	0.5, tl	ne 95%	confi	dence li	mit
	(a)	3 to 7		(b)	4.5 to	5.5			
	(c)	3.5 to 6.5		(d)	4 to				
(9)	` '	easure of lo	ocation w	` /			distrib	ution in	the
,		o of 3:1 is :							
	(a)	Median		(b)	First	quarti	le		
	(c)	Third quar	rtile	(d)	Mode				
(10)	Тур	e I error is							
	(a) Accepting a null hypothesis when false								
	(b) Accepting a null hypothesis								
	(c) Rejecting a null hypothesis when true								
	(d)	Rejecting a	a null h	ypoth	esis				
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