C 81880

Name...

Reg. No

FOURTH SEMESTER B.Sc. DEGREE EXAMINATION, APRIL/MAY 2015

(UG—CCSS)

Complementary Course—BioStatistics

MB 4C 16 (P)—BIOSTATISTICS (PRACTICAL)

Time : Two Hours

Maximum : 10 Weightage

Answer any **five** *questions.*
Each question carries a weightage of 2.

1. For the following data, calculate :

    (a) Mean ; (b) Median ; and (c) Standard deviation.

Class	170-180	180-190	190-200	200-210	210-220	220-230	230-240	240-250
Frequency	52	68	85	92	100	95	70	28

2. (a) Draw Histogram and frequency curve for the following data :

Class	10 - 13	13 - 15	15 - 17	17 - 19	19 - 21	21 - 23	23 - 25
Frequency	6	53	85	56	21	16	8

    (b) Find the Mode for the following frequency distribution :

Class	0-10	10 - 20	20 - 30	30 - 40	40 - 50	50 - 60	60 - 70
Frequency	4	16	60	100	40	6	4

3. (a) Calculate Quartiles for the following data :

Marks :	0-10	10 - 20	20 - 30	30 - 40	40 - 50	50 - 60	60 - 70	70 - 80	80 - 90
Number of students :	11	18	25	28	30	33	22	15	22

    (b) Calculate Harmonic mean for the following data :

    9.7, 0.0009, 178.7, 0.874, 0.1238, 0.012, 89.9, 78.4, 0.989 and 0.008.

4. Five dice were thrown together 96 times. The number of times 4, 5 or 6 was actually thrown in the experiment is given below. Fit the Binomial distribution and Compute the expected frequencies.

Number of dice showing 4, 5 or 6	0	1	2	3	4	5
Observed frequency	1	10	24	35	18	8.

Turn over

5. Fit a Poisson distribution for the following data and compute the expected frequencies.

X	0	1	2	3	4	5
No. of cells	142	156	69	27	5	1

6. Calculate the correlation coefficient and obtain the lines of regression from the following data. Also obtain the value of Y when $X = 14$.

	1	3	4	8	9	11	13
Y	1	2	4	5	6	8	9

7. The lifetimes (in hours) of samples from three different brands of batteries A, B and C were recorded as given in the table

Brands					
A	20	21	23	16	20
B	18	20	17	25	15
C	25	28	22	28	32

Test whether the three brands have different average lifetimes.

8. Three varieties of rice were tested in 4 blocks. The following table shows the yields obtained in (kg). Analyse the data.

Varieties	Treatments			
	1	2	3	4
A	6	5	3	8
B	8	9	6	5
C	10	7	8	7

9. Two researchers adopted different sampling techniques while investigating the same group of students to find the number of students falling in different intelligence levels. The results are as follows :

Researchers	No.of students in each level			
	Below Average	Average	Above Average	Genius
X	86	60	44	10
Y	40	33	25	2

Examine whether the sampling techniques adopted by the two researchers are significantly different.

10. (a) Calculate $R_{3.12}$, $R_{1.23}$ and $R_{2.13}$ from the following data :

$= 6.8$, $X2=7$, $\bar{X}_3 = 7.4$

$S_1 = 1$ $S2 = .8$ $S_3 = .9$

$r12 = \cdot 6$ $r_{13} = \cdot 7$ $r_{23} = \cdot 65$

(b) The correlation coefficient between marks of Biostatistics and Microbiology of 25 randomly selected students is 0.15. Is this value of correlation significant ?