[Total No. of Questions - 18] [Total No. of Printe ages - 4]
(2126)

16380(D)

- 0 DEC 2016

B. Pharmacy 3rd Semester Examination

Pharmaceutical Statistics (NS)

BP-235

- 0 DEC 2016

Time : 3 Hours **Max. Marks : 70**

The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary/continuation sheet will be issued.

Note : Attempt any two questions from Section A and any eight questions from Section B. Section C is compulsory.

SECTION - A

1. Find the standard deviation and coefficient of variance from the following data:

Wages	No. of workers	Wages	No. of workers
upto Rs. 10	12	upto Rs. 50	157
upto Rs. 20	30	upto Rs. 60	202
upto Rs. 30	65	upto Rs. 70	222
upto Rs. 40	107	upto Rs. 80	230

(10)

2. Calculate Karl Pearson's coefficient of skewness:

Variable:	10-20	20-30	30-40	40-50	50-60
Frequency:	18	20	30	22	10

(10)

3. The following data give the experience of machine operators and their performance ratings as given by the no. of good parts turned out per 100 pieces.

	1	2	3	4	5	6	7	8
Operator (x) Experience	16	12	18	4	3	10	5	12
Perforance (y) Experience	87	88	89	68	78	80	75	83

Calculate the regression lines of performance ratings on experience and estimate the probable performance if an operator has 7 years experience. (10)

SECTION - B

4. Find the missing frequency from the following data:

Marks :	0-10	10-20	20-30	30-40	40-50	50-60
No. of students :	5	15	20	–	20	10

The arithmetic mean is 34 marks. (5)

5. From the following data obtain the two regression lines:

Sales :	91	97	108	121	67	124	51	73	111	57
Purchases :	71	75	69	97	70	91	39	61	80	47

(5)

6. Calculate mean and standard deviation of the following frequency distribution of marks:

Marks	No. of students	Marks	No. of students
0-10	5	40-50	50
10-20	12	50-60	37
20-30	30	60-70	21
30-40	45		

(5)

[P.T.O.]

7. Ten oil tins are taken at random from an automatic filling machine. The mean weight of the 10 tins is 15.8 kg and standard deviation is 0.5 kg. Does the sample mean differ significantly from the intended weight of 16 kg?

   (given for $\upsilon=9$, $t_{0.05}=2.26$). (5)

8. Two samples are drawn from two normal populations. From the following data, test whether the two samples have the same variance at 5% level:

   Sample 1: 60 65 71 74 76 82 87

   Sample 2: 61 66 67 85 78 63 86 88 91

   For $\upsilon_1=9$ and $\upsilon_2=7$, $F_{0.05}=3.68$. (5)

9. The coefficient of correlation between two variates x and y is 0.64. Their covariance is 16. The variance of x is 9. Find the standard deviation of y series. (5)

10. Calculate Karl Pearson's coefficient of correlation for the data given below, taking 66 and 63 as assumed means of x and y respectively.

Height of Husbands x: (in inches)	60	62	64	66	68	70	72
Heights of Wives y: (in inches)	61	63	63	63	64	65	67

(5)

11. The arithmetic mean and standard deviation of a series of 20 items were calculated by a student as 20cm and 5cm respectively. But while calculating an item 13 was misread as 30. Find the correct arithmetic mean and standard deviation. (5)

12. The following table gives heights of boys and girls studying in a college. Find (i) Standard deviation of the heights of boys and girls taken together (ii) whose heights are more variable.

	Boys	Girls
Number	400	100
Average height	68 inches	65 inches
Variance	9	4

(5)

13. Calculate the median from the following data:

Weight in gms	No. of Apples	Weight in gms	No. of Apples
410-419	14	450-459	45
420-429	20	460-469	18
430-439	42	470-479	07
440-449	54		

(5)

SECTION - C

14. Define statistics. Discuss its importance and limitations.

15. What are the characteristics of a good measure of central tendency?

16. Explain the meaning of correlation between two variables.

17. What do you understand by the analysis of variance?

18. What is χ^2 test? Under what conditions it is applicable?

(2×5=10)