Fertilizer treatment	Varieties of wheat			Total
	W_1	W_2	W_3	
f_1	55	72	47	174
f_2	64	66	53	183
f_3	58	57	74	189
f_4	59	57	58	174
Total	236	252	232	720

Set up a table for the analysis of variance and work out the F-ratios in respect of the above. Are the F-ratios significant?

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M.B.A. DEGREE EXAMINATION,
DECEMBER 2016/JANUARY 2017.

First Semester

RESEARCH METHODOLOGY

Time : Three hours   Maximum : 100 marks

PART A — ($5 \times 6 = 30$ marks)

Answer any FIVE questions.

1. Explain various steps involved in Scientific Research.

2. What is Chi Square test? Explain its significance in statistical analysis of research.

3. Discuss various methods of collecting data for research.

4. Describe the concept of Sampling Errors and its significance in sampling analysis.

5. Illustrate different components of Research Problem.

6. Describe Case Study Research.

7. Enumerate the properties of a Normal Distribution.

8. Briefly discuss the steps involved in Research Report Preparation.

PART B — (5 × 10 = 50 marks)

Answer any FIVE questions out of the following.

9. Describe Sample Design. Mention the points that should be taken into consideration while deciding on Sample size for any Research Project.

10. Data collection is the backbone of Business Research. Discuss about the various techniques used for data collection.

11. Write short notes on the following:
    (a) Factor Analysis
    (b) Binomial Distribution
    (c) One Sample Test
    (d) Merits and Demerits of sampling.

12. What do you mean by Research Problem? Mention various points to be kept in mind while selecting and formulating a research problem?

13. In an anti-malaria campaign in a city, Chloroquine was administered to 812 persons out of a total population of 3248. The number of fever cases is shown below:

Treatment	Fever	Non Fever	Total
With Chloroquine	20	792	812
Without Chloroquine	220	2216	2436
Total	240	3008	3248

Discuss the usefulness of Chloroquine in checking malaria using Chi-square test H0- The chloroquine is not effective in checking malaria at confidence level of 95%.

14. Show the relationship among Exploratory, Descriptive and Causal research.

15. Discuss the basic requirement of report preparation including report format, report writing, graphs and tables.

16. Should every research problem have a hypothesis? Discuss in detail the steps involved in hypothesis testing.

PART C — (1 × 20 = 20 marks)

(Compulsory)

17. (a) Explain the meaning of Analysis of Variance. Describe the technique of ANOVA for one way and two way classification.

    (b) Three varieties of wheat W_1, W_2 and W_3 are treated with four different fertilizers viz., f_1, f_2, f_3 and f_4. The yields of wheat per acre were as under: