

6. Find out solution of the following :

- (a) Find the solution of the IVP $y' = -4y + 2$, $y(0) = 5$.
- (b) Find the solution of the IVP $y' = 6y + 1$, $y(0) = 0$.

Unit IV

7. What do you mean by chromatographic ?
Explain its importance and scope.
8. Explain the assumptions and applications of spectrophotometric methods in data analysis.

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Ph.D. (Course Work)

EXAMINATION, May 2019

RESEARCH METHODOLOGY

CHE901

Chemical

Time : 3 Hours]

[Maximum Marks : 100

Before answering the question-paper candidates should ensure that they have been supplied to correct and complete question-paper. No complaint, in this regard, will be entertained after the examination.

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit. All questions carry equal marks.

Unit I

1. What is the necessity of defining a research problem ? Explain with suitable example. Discuss its scope.
2. Write short notes on the following :
 - (a) Explain the importance and role of plagiarism in research.
 - (b) Explain the role of multimedia and internet in research.

Unit II

3. (a) What do you mean by Data ? Explain the different methods used for of primary and secondary data.
 - (b) Explain the importance of Standard Deviation in research.

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4. (a) An incomplete distribution family according to their expenditure per week is given below. The median and mode for the distribution are Rs. 25 and Rs. 24 respective. Calculate the missing frequencies.

Expenditure	No. of Families
0-10	14
10-20	?
20-30	27
30-40	?
40-50	15

- (b) Explain the importance of probability distribution in data analysis in research.

Unit III

5. Write short notes on the following :
 - (a) Explain the importance of round-off and error propagation in mathematical analysis.
 - (b) Explain the importance of first order differential equations.

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P.T.O.