

(7 pages)

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Code No. : 7883

Sub. Code : PCHM 34

M.Sc. (CBCS) DEGREE EXAMINATION,  
NOVEMBER 2019.

Third Semester

Chemistry – Core

SCIENTIFIC - RESEARCH METHODOLOGY

(For those who joined in July 2017 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL the questions.

Choose the correct answer:

1. Which of the following are top tips we offer to help you improve your use of the literature?
  - (a) Keep a research notebook
  - (b) Sort your references in a spreadsheet
  - (c) Apply Fisher's notation to the arguments you encounter
  - (d) All of the above

2. Which of these describes our advice on using internet search engines?
  - (a) Engines such as Yahoo and Google are much more efficient and effective than databases such as PsycINFO
  - (b) Web addresses ending in .ac.uk, or .edu are generally bonafide academic sources
  - (c) Wiki entries are more up to date and accurate than journal articles
  - (d) None of the above
3. The \_\_\_\_\_ is an indispensable aid when searching the chemical substance and the General Subject Volume Indexes.
  - (a) Decennial index
  - (b) Patent index
  - (c) Service source index
  - (d) Index Guide
4. Subject term referring to reactions, processes and equipment, classes of substances, and plant and animal species should be searched in the \_\_\_\_\_.
  - (a) Service source index
  - (b) General Subject Index
  - (c) Decennial index
  - (d) Patent index

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5. A hypothesis must be \_\_\_\_\_.  
(a) Diffuse (b) Specific  
(c) Slow (d) Speedy
6. \_\_\_\_\_ is the first step of research process.  
(a) Formulation of a problem  
(b) Collection of Data  
(c) Editing and Coding  
(d) Selection of a problem.
7. Which of the following region of infrared is extremely useful for spectroscopic studies of organic compounds?  
(a) Near Infrared  
(b) Far infrared  
(c) Middle infrared  
(d) None of these
8. If the instrument is used in wrong manner while application, then it will results in \_\_\_\_\_.  
(a) Systematic error  
(b) Instrument error  
(c) Random error  
(d) Environmental error

9. \_\_\_\_\_ is a website which provides subscription-based access to a large database of scientific and medical research.  
(a) SciFinder (b) Chemport  
(c) Science Direct (d) Elsevier
10. One of the following search engine is exclusively meant for scientific information \_\_\_\_\_.  
(a) Google (b) SCIRUS  
(c) Yahoo (d) Altavista.

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Write a note on current contents.  
Or  
(b) Write a note on science citation index.
12. (a) Describe about the Chemical abstracts.

Or

- (b) Describe the collective index and service source index.



13. (a) How will you organize the manuscript?

Or

(b) What is an abstract of a research paper?  
Narrate the informative abstract.

14. (a) Write a note on significant figures.

Or

(b) What is student's t-distribution and t-tests?

15. (a) Write any five browsers for your literature survey in the internet.

Or

(b) Write the role of STN international in scientific and technical research.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Discuss the sources of chemical information.

Or

(b) Write a note on Indexes and abstracts in science and technology.

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17. (a) Explain the following

(i) General Subject Index

(ii) Chemical Substance Index.

Or

(b) State the following

(i) Formula Index

(ii) Index of Ring Systems.

(iii) Author index

(iv) Patent.

18. (a) How will you write a research report?

Or

(b) What are the characteristics of a good research problem?

19. (a) Explain the principle and sample preparation of TEM.

Or

(b) What is an error? How will you classify the errors?

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20. (a) How will you prepare research proposal for any grants?

Or

(b) How will you submit your research paper through online to various journals?

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