

S-5/CEMH/DSE-II/19

TDP (Honours) 5th Semester Exam., 2019

CHEMISTRY

(Honours)

PAPER - DSE - II

Full Marks : 80

Time : 3 Hours

*The figures in the margin indicate full marks.
Candidates are required to give their answers
in their own words as far as practicable.*

Group - A

1. Choose the correct answer of the following :

1×20=20

(a) Full form of DOI used in a journal is —

- (i) Digital Objective Identifier
- (ii) Digital Object Identifier
- (iii) Digit Object Identification
- (iv) Digital Objective Identification

[Turn Over]

(b) High impact factor of a journal indicates —

- (i) Low citation index and high H-index of the journal
- (ii) High citation index and high H-index of the journal
- (iii) High citation index and low H-index of the journal
- (iv) None of the above

(c) Which of the following is a Digital index of a journal ?

- (i) Citation index
- (ii) Author index
- (iii) Formula index
- (iv) All of the above

(d) The abbreviation of 'www' used in the internet search is —

- (i) World Wide Website
- (ii) World Wide Width
- (iii) World Wide Webcast
- (iv) World Wide Web

(e) The sequence of writing a research paper is —

(i) Title, Abstract, Keywords, Literature survey, Result and discussion, and Conclusion

(ii) Title, Keywords, Abstract, Literature survey, Result and discussion, and Conclusion

(iii) Title, Abstract, Literature survey, Result and discussion, Keywords, and Conclusion

(iv) Title, Abstract, Result and discussion, Literature survey, Keywords, and Conclusion

(f) A meeting held for the discussion of a topic, especially one in which the participants make presentations is known as —

(i) Seminar

(ii) Symposium

(iii) Workshop

(iv) Conference

[Turn Over]

(g) In the conduct of research, researchers rely on which kinds of data sources —

(i) Primary source only

(ii) Secondary sources only

(iii) Primary and secondary sources

(iv) Primary, Secondary and Tertiary sources

(h) 4R's in the safety measurement rule stands for —

(i) Renewable, Recovery, Recycling and Reuse

(ii) Reduction, Recovery, Recycling and Reuse

(iii) Reduction, Renewable, Recycling and Reuse

(iv) Renewable, Recovery, Recycling and Reaction

(i) Example(s) of search engine is / are —

(i) Google scholar

(ii) Yahoo

(iii) MSN Search

(iv) All of the above

(j) Which of the following is not a green solvent —

(i) Supercritical CO_2

(ii) Me_2CO_3

(iii) CHCl_3

(iv) 2-MeTHF

(k) The Abstract should include the following —

(i) Objectives and scope of the investigation

(ii) A brief reference to the Materials and Methods

(iii) A summary of the results and conclusions

(iv) All of the above

(6)

(l) Which one is the violation of safety rules in a chemical laboratory?

(i) Wear safety goggles at all times

(ii) Wear apron and correct shoes in the laboratory

(iii) When mixing chemicals, pour the less concentrated solution into the more concentrated solution

(iv) Correct labelling of equipment and ensuring the record of the date of opening of chemicals

(m) Which of the following is not an ethical violation in the research ?

(i) Acknowledgement of the funding agency

(ii) Mishandling of funds

(iii) Conflicts of interest

(iv) All of the above

(n) Presenting someone else's work or ideas as your own, with or without their consent is known as —

(i) Ethical work

(ii) Scientific work

(iii) Plagiarism

(iv) Bibliography

(o) Which of the following is / are the parameters of a journal quality ?

(i) H-index

(ii) Impact factor

(iii) SCImago Journal Rank

(iv) All of the above

(p) Spectrophotometer is used —

(i) to measures the amount of photons absorbed when light passes through a sample solution

(ii) for spectroscopic analysis of sample materials

(iii) for measuring wavelengths of light over a wide range of the electromagnetic spectrum

(iv) All of the above

(q) Analysis of variance (ANOVA) is a —

(i) parametric statistical technique used to compare datasets of an experiments

(ii) software used to catch Plagiarism

(iii) software used to draw the chemical structure of compounds

(iv) None of the above

(r) Which of the following statement(s) is/are true ?

- (i) Scopus is Elsevier's abstract and citation database
- (ii) Google Scholar Citations provide a simple way for authors to keep track of citations to their articles
- (iii) Science direct is a website which provides subscription-based access to a large database of scientific and medical research
- (iv) All of the above

(s) Which of the following is not a first aid material ?

- (i) Saline water
- (ii) Eye pad dressings
- (iii) Antiseptic wipes
- (iv) Sterile dressings

(10)

(t) Which of the following is / are the example(s) of digital electronics ?

- (i) Printers
- (ii) e-book reader
- (iii) Laptop
- (iv) All the above

Group - B

Answer *four* questions taking *one* from each unit.

3×4=12

Unit - I

- 2. How text books are different from note books? 3
- 3. Write the name of two web resources relevant to scientific research and illustrate their usefulness. 3

Unit - II

- 4. Briefly discuss about the result section of a scientific article. 3
- 5. Write the significance of acknowledgement section in a research paper. 3

Unit - III

6. What do you mean by first aid box? Mention its importance in wet lab research. 3
7. Write the procedures of disposal of hazardous laboratory materials. 3

Unit - IV

8. Write a short note on fitting of linear equations. 3
9. Briefly discuss the elementary aspects of digital electronics. 3

Group - C

Answer any *four* questions taking *one* from each unit.

12×4=48

Unit - I

10. (a) Illustrate with suitable example the meaning of primary data and secondary data in research work.
- (b) What are the difference between reviews and monographs ?

[Turn Over]

(12)

(c) What do you mean by indexing? What are the different types of indexing? Write the significance of indexing. $4+4+4=12$

11. (a) What do you mean by impact factor? Write the significance of impact factor of a research journal.

(b) Name any four electronic database and mention their usefulness.

(c) What is H-index and how is it calculated?

$4+4+4=12$

Unit - II

12. (a) What is plagiarism? Write ten main forms of plagiarism committed by students.

(b) Discuss the main points which is needed to be included in abstract and introduction section of a research article.

(c) Between poster presentation and oral presentation of a research paper which one is more effective and why? $4+4+4=12$

13. (a) What are the difference between bibliography and reference. Write the name of two reference management software.

(b) What is literature survey? Write the importance of literature survey.

(c) Discuss the following ethical ideas :

(i) Duplicate submission

(ii) Fabrication

4+4+4=12

Unit - III

14. (a) What are flammable and combustible liquids? Classify flammable and combustible liquids on the basis of flash point.

(b) What precaution should be taken while working with poisonous chemicals?

(c) Give two examples of corrosive chemicals.

(d) What precautions do you need before entering in the chemistry laboratory ? 4+3+2+3=12

15. (a) Name the functional groups which may cause explosive nature of compounds.

(b) What do you mean by recovery and recycling of laboratory chemicals. Explain with examples.

[Turn Over]

(14)

(c) What necessary measures should be taken during chemical spill emergency ?

(d) How laboratory chemicals may be reused?
Explain with example. $3+3+3+3=12$

Unit - IV

16. (a) Why scientists use SI units ? Name five SI base units commonly used in chemistry.

(b) Write notes on basic aspects of multiple linear regression analysis.

(c) Which statistical parameters may be used for comparing the experimental and predicted activity data of compounds?
 $4+4+4=12$

17. (a) Discuss briefly about Chemometrics.

(b) What is analysis of variance? From the following data calculate a F score for a one-factor ANOVA

(15)

Subject Gender	Manual Therapy treatment Type 1	Manual Therapy treatment Type 2	Manual Therapy treatment Type 3
Male	14	16	20
Male	14	14	18
Female	11	13	17
Female	13	13	17
Group Means	13	14	18
Grand Mean	15		

(c) Discuss about the components used in circuits of spectrophotometers.

$$2+(2+4)+4=12$$
