

TDP (Honours) 5th Semester Exam., 2021

CHEMISTRY

(Honours)

PAPER : (DSE-II)

(Research Methodology for Chemistry)

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 from the following :

1×20=20

(a) The full form of SCI is

(i) Science Citation Index

(ii) Science Collection Index

(iii) Scientific Community Index

(iv) None of the above

(b) The purpose of literature survey is

(i) to gain an understanding of the existing research and debates relevant to a particular topic

(ii) to gain experience for doing research

(iii) to build the knowledge in related field

(iv) All of the above

(c) Google scholar may be used for searching

(i) journal informations

(ii) journal index

(iii) citation index

(iv) None of the above

(d) E-Journal means

(i) essential journals

(ii) engineer journals

(iii) electronic form of journals

(iv) None of the above

(e) Impact factor depends on

(i) citations

(ii) publications

(iii) Both (i) and (ii)

(iv) None of the above

(f) Which of the following is incorrect about a good poster?

(i) Use clear language and images in logical sequence

(ii) Can be read from more than 5-7 ft away

(iii) Poster content should be 60 percent image

(iv) Poster have much less visual impact

(g) A research which follows case study method is called

(i) clinical or diagnostic

(ii) casual

(iii) analytical

(iv) qualitative

(h) Research projects should have aims that are relevant to

(i) social

(ii) professional

(iii) scientific evolution

(iv) All of the above

(i) Bibliography means

(i) foot note

(ii) quotations

(iii) list of books referred

(iv) biography

(j) Plagiarism infringement is/are

(i) a legal issue

(ii) an ethical issue

(iii) Both (i) and (ii)

(iv) None of the above

(5)

(k) Which of the following solvent is environment friendly?

(i) Pyridine

(ii) Alpha Picoline

(iii) DMF

(iv) H₂O

(l) Which of the following is a source of secondary data?

(i) Personal interview

(ii) Questionnaire

(iii) News paper

(iv) Email

(m) Data collected directly by the researcher through the experiments is known as

(i) primary research

(ii) secondary research

(iii) experimental research

(iv) qualitative research

(n) ANOVA is also called as

(i) T test

(ii) Chi test

(iii) F statistics

(iv) T statistics

(o) The label DANGER on a chemical container most accurately signifies

(i) that the hazards can cause less than serious injury

(ii) that the hazards can cause serious injury

(iii) that users should be careful when using, handling or storing the chemical

(iv) None of the above

(p) What does MSDS stand for?

(i) Material Safety and Data Sheets

(ii) Material Safety and Density Sheets

(iii) Material Safety and Duration Sheets

(iv) Material Safety and Data Sheets

(q) Solvents such as THF and ethyl ether are particularly hazardous because

(i) they are flammable

(ii) they penetrate the skin

(iii) they form explosive peroxide when exposed to air

(iv) All of the above

(r) What are the three basic electrical quantities?

(i) Resistance, capacitance, inductance

(ii) Power, voltage, conductance

(iii) Voltage, current, resistance

(iv) Current, reluctance, inductance

(s) Which of the following is **not** the measure of dispersion?

(i) Range

(ii) Mean deviation

(iii) Standard deviation

(iv) Median

(10)

11. (a) What are the advantages of electronic journal?
- (b) What is chemical abstracts? What are the major indexes of chemical abstracts?
- (c) What are the programme partners of UGC-INFONET E-journal?
- (d) Write the names of two search engines relevant to scientific research and illustrate their usefulness. $3+4+2+3=12$

UNIT—II

12. (a) Write notes on ethical responsibilities of a researcher.
- (b) Briefly discuss the preparation and importance of power point presentation. Which one is more effective among poster presentation and oral presentation? Justify your answer.
- (c) Differentiate between plagiarism and copyright infringement with example. $4+4+4=12$
13. (a) What are the organisational pattern of a research paper?
- (b) What are the criteria for journal selection for publishing?
- (c) How can you avoid plagiarism? $4+4+4=12$

UNIT—III

- 14.** (a) State safety rules and protective environment of the research laboratory?
- (b) What is flash point? Write the significance of it.
- (c) What are hazardous chemicals? How such chemicals are stored in the laboratory?
- (d) Write notes on safe storage and disposal of waste chemicals. $3+3+3+3=12$

- 15.** (a) What are explosive materials? Mention the procedure for laboratory disposal of explosives.
- (b) Give two examples of chemical explosive. Write their molecular formula.
- (c) What do you mean by recycling of laboratory chemicals? Explain with examples.
- (d) What precautions should be taken during the transportation of hazardous chemicals? $4+2+3+3=12$

UNIT—IV

- 16.** (a) What do you mean by statistical tests? What are the types of statistical test? Mention the significances of statistical tests.

(12)

(b) What is the difference between correlation and linear regression? How do you interpret correlation and linear regression results?

(c) Mention the four types of correlation used in statistics. $(2+2+2)+(2+2)+2=12$

17. (a) What are the fundamentals of electronics? Write the five basic parts of an electrical circuit.

(b) Write the basic principle of spectrophotometer. What are the main components of UV-Visible spectrophotometer?

(c) What are the digital electronics? Write the advantages of digital electronics?

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

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