Total No. of printed pages = 6

63/2 (SEM-1) CHM 106 OP1/OP2

2021

(held in 2022)

CHEMISTRY

(Theory Paper)

Paper Code : CHM-106 (OP1)

(Green Chemistry)

Full Marks – 50

Time – Two hours

The figure in the margin indicate full marks for the questions.

1. Choose the correct answer : 1×5=5

(a) The design of processes that reduce or eliminate the use and production of toxic products is known as

(i) Environmental Chemistry

(ii) Polymer Chemistry

(iii) Green Chemistry

(iv) Nuclear Chemistry

[Turn over

(b) Who is known as father of Green Chemistry ?

(i) M. Lancaster (ii) P. T. Anastas

(iii) J. H. Clark (iv) J. C. Warner

(c) Green Chemistry reduces the use of

(i) reactants (ii) products

(iii) energy (iv) fuel

(d) Minamata disease is caused by

(i) Methyl isocyanide

(ii) Lead nitrate

(iii) Ferric chloride

(iv) Methyl mercury

(e) Which of the following is an excellent green solvent ?

(i) Carbon dioxide

(ii) Carbon monoxide

(iii) CFC

(iv) Methanol.

2. Answer the following questions : 2×5=10

(a) Is supercritical CO_2 a toxic solvent ? Name one volatile solvent.

(b) Write about the concept of atom economy in green chemistry.

(c) Mention the characteristic properties of ionic solid.

(d) What are green solvents ? Explain with examples.

(e) What are super-critical fluids ? Justify your answer with suitable example.

3. Answer any *five* of the following questions : 5×5=25

(a) Explain the role of green chemistry on sustainable development.

(b) Write short notes on Microwave chemistry.

(c) Establish the differences between green chemistry and general chemistry. Is green chemistry and environmental chemistry same ? Justify.

(d) Explain the benefits of green chemistry to human health, environment and economy.

(e) What are the impacts of green chemistry on industrial synthesis ?

(f) Discuss about the importance of reactions in solid phase.

(g) Write a note on asymmetric catalysis.

4. Write answer of either (a) or (b) : $10\times1=10$

(a) Write short notes on :

(i) Use of green chemistry in energy efficiency.

(ii) Use of utrasonic radiation in green synthesis.

(b) Explain the twelve principles of green chemistry.

(Theory Paper)

Paper Code : CHM-106 (OP2)

(Chemistry in Everyday Life)

Full Marks – 50

Time – Two hours

The figure in the margin indicate full marks for the questions.

1. Answer the following questions :

(a) Who introduced LPG ? Give the chemical formulas of LPG. 1+1=2

(b) What is SAR in medicinal chemistry ? 2

(c) What are the four types of drugs ? 2

(d) What is the difference between SAR and QSAR ? 3

(e) Who is the father of medicinal chemistry ? How is chemistry used in medicine ? 1+2=3

(f) What is the chemical name of detergent soap ? 1+2=3

(g) Name the type and formulas of polymers we use in day today life. 2+3=5

(h) Elucidate the formation of a N-type and P-type semiconductors. 5

(i) What are herbicides ? What are their uses and toxicity ? 2+3=5

(j) How is cooking food related to chemistry ? 5

Or

Explain briefly how green chemistry reduces risk and prevents environmental problems ? 5

(k) Explain briefly the causes of chemical disaster. 5

(l) What chemical creates love in human being ? Give the mechanism. 1+4=5

(m) Discuss briefly the role of Chemistry in esthetics. 5

Or

Discuss briefly the role of Chemistry in style and fashion. 5