

M.Sc. CHEMISTRY
FOURTH SEMESTER
EVERYDAY CHEMISTRY
MSC – 405A MDC
[USE OMR FOR OBJECTIVE PART]

**SET
A**

Duration: 3 hrs.

Full Marks: 70

Time: 30 min.

[Objective]

Marks: 20

Choose the correct answer from the following:

1X20=20

- Glycerol contains
 - 3 -OH group
 - 2 -OH group
 - 2 -COOH group
 - 3 -COOH group
- Fats or oils are, in general,
 - Soluble in water
 - Insoluble in water
 - Heavier than water
 - Reacts with water
- Pesticides are chemical substances that are meant to
 - Grow high protein food
 - Kill the pests
 - Kill the unwanted plants
 - Help vegetable to grow faster
- Saponification value of oil means the number of milligrams of
 - Mg(OH)₂
 - H₂O
 - PbO
 - KOH
- Fertilizers are supplied to the crops for
 - Inhibition of insects
 - Kill all the harmful pest
 - Increasing their productivity
 - Decreasing their productivity
- In which type of industries LPG is used as a fuel?
 - Steel industries
 - Plastic Industries
 - In the production of olefins
 - In the production of coal gas
- Which of the following is a natural dye?
 - Blue 1 Lake
 - Indigo
 - Methylene blue
 - Congo red
- Linseed oil is used as ___ in paint.
 - Pigment
 - Binder
 - Additives
 - Solvent
- Brass is an alloy of
 - Copper and tin
 - Copper and nickel
 - Copper and Aluminium
 - Copper and zinc

10. Which of the following types of glass accounts for about 90% of manufactured glass?
- Potash-lime glass
 - Soda-lime glass
 - Potash-lead glass
 - Soda-lead glass
11. In a semiconductor, current conduction is due to
- only holes
 - only free electrons
 - Holes and free electrons
 - None of these
12. What is the primary cause of ozone depletion in the stratosphere?
- Methane emissions
 - Chlorofluorocarbons (CFCs)
 - Sulfur oxides (SO_x)
 - Carbon dioxide (CO₂)
13. Which of the following is an example of a hazardous chemical?
- Vinegar (acetic acid)
 - Table salt (sodium chloride)
 - Lead (Pb)
 - Water (H₂O)
14. What is the main source of marine pollution by oil?
- Industrial discharges
 - Natural seepage
 - Oil spills from ships
 - Atmospheric deposition
15. Which of the following is a renewable source of energy?
- Coal
 - Natural gas
 - Solar power
 - Nuclear power
16. Which of the following is a non-renewable resource?
- Wind energy
 - Geothermal energy
 - Fossil fuels
 - Biomass
17. What is the main environmental concern associated with nuclear power?
- Air pollution
 - Land degradation
 - Greenhouse gas emissions
 - Radioactive waste disposal
18. Which of the following is a key principle of green chemistry?
- Designing chemicals that persist in the environment
 - Using toxic solvents in chemical processes
 - Maximizing resource consumption
 - Designing safer chemicals and processes
19. Which of the following is a strategy to reduce water pollution?
- Increasing the use of chemical fertilizers
 - Improving wastewater treatment systems
 - Encouraging deforestation
 - Disposing of hazardous waste in water bodies
20. Which of the following is an example of point source pollution?
- Runoff from agricultural fields
 - Vehicle emissions
 - Industrial effluent discharge pipe
 - Residential energy consumption

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(Descriptive)

Time : 2 hrs. 30 mins.

Marks : 50

[Answer question no.1 & any four (4) from the rest]

1. a. What do you mean by triglyceride? Write its chemical structure. Is Palmitic acid a saturated or unsaturated fatty acid? 3+2+5
=10
b. Write four different properties of metals.
c. Explain the negative effects of chemical pollution on water sources and aquatic life. What are the negative effects of chemical waste disposal on ecosystems and human health?

2. a. Write a note on hardening of oils. 3+4+3
b. What is saponification value of oils or fats? How saponification value can be determined? =10
c. How do detergents remove dirt and stains from clothing?

3. a. What is pesticide? Mention all the different class of pesticides. Give two examples of pesticide. 6+4=10
b. What do you mean by cosmetics? Mention different class of cosmetic products.

4. a. What is crude oil and what are petroleum products? 5+3+2
b. What are the components of Portland cement? What happens when Portland cement is mixed with water? =10
c. Write the name of two different alloys and its components.

5. a. What are semiconductors? Give some examples of semiconductors. Discuss the properties of semiconductors. 4+4+2
b. What are the components of soda-lime glass? Explain the characteristics of LPG. =10
c. Discuss the characteristics of compressed natural gas.

6. a. Explain the concept of green chemistry and its potential benefits for the environment and human health. 4+3+3
=10
b. Describe the causes and consequences of deforestation and its impact on biodiversity and climate change.
c. Explain the environmental and health effects of air pollution from vehicle emissions.
7. a. Explain the sources and impacts of water pollution on aquatic ecosystems and human populations. 5+2+3
=10
b. Describe the environmental and health effects of noise pollution in urban and industrial areas.
c. Describe the sources and effects of radioactive pollution on the environment and human health.
8. a. What is a polymer? Write about natural and synthetic polymers? 4+3+3
=10
b. What are homo-polymer and co-polymer?
c. Write about the differences between Thermoplastic and Thermosetting polymers?

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