

## D-6336

M.Sc. (III<sup>rd</sup> Semester) Examination, 2020

### CHEMISTRY

(Green Chemistry)

*Time Allowed : Three Hours*

*Maximum Marks : 70*

#### SECTION - A

(Objective Type Questions)

**Note :** Attempt any ten questions. Each question carries  
one mark. **1×10=10**

**Q. 1.** Fill in the blanks :

- (i) One of the principles of green chemistry says  
that to produce \_\_\_\_\_ goods.
- (ii) After the use of chemicals we must \_\_\_\_\_  
them properly.

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- (iii) \_\_\_\_\_ are greener than the conventional.
- (iv) The \_\_\_\_\_ can also be recycled and is  
biodegradable.
- (v) The process of applying dye or to precipitate  
colouring matters upon a thing to be dyed is  
called \_\_\_\_\_.

Choose the correct answer :

(vi) Green chemistry is also called as :

- (a) Life chemistry  
(b) Environmental chemistry  
(c) Organic chemistry  
(d) Sustainable chemistry

(vii)  $C_2H_4 + \frac{1}{2}O_2 \rightarrow C_2H_4O$  (Ethylene-oxide)

this reaction will takes place under presence  
of catalyst. Find out the % atom economy :

- (a) 25%  
(b) 50%

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- (c) 75%
- (d) 100%
- (viii) How many stages of life cycle assessment (LCA):
- (a) 4
- (b) 3
- (c) 2
- (d) 0
- (ix) Photo synthesis is an example of :
- (a) Thermal reaction
- (b) Photo - chemical reaction
- (c) Wittig reaction
- (d) None of these

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- (x) Which of these energy sources is not renewable ?
- (a) Hydro power
- (b) Solar radiation
- (c) Uranium
- (d) None of these
- (xi) What is the raw material in leather manufacturing ?
- (a) By product of meat industry
- (b) By product of food industry
- (c) By product of fishing industry
- (d) By product of compound industry

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(xii) Renewable resources of energy include :

- (a) Fuels energy
- (b) Natural gas
- (c) Solar energy
- (d) None of these

**SECTION - B**

**Note :** Attempt any five questions. Each question carries

2 marks.

**5×2=10**

**Q. 2.** Very Short Answer Type (25-30 words) :

- (i) What are green chemical compounds ?
- (ii) Write the concept of green chemistry.
- (iii) What are environmental metrics ?
- (iv) How does microwave heating work ?
- (v) What is biomass energy ?

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(vi) Write the advantages of renewable energy.

(vii) What is skin-tanning ?

**SECTION - C**

**Note :** Attempt any five questions. Each question carries

4 marks.

**5×4=20**

**Q. 3.** Short Answer Type (250 words) :

- (i) Write note on atom-economy.
- (ii) What do you know about green solvent ?
- (iii) Write note on lactic acid production from food waste.
- (iv) Explain sono photocatalytic oxidation.
- (v) Discuss natural chemical resources.
- (vi) Explain environmental impacts of solar energy.
- (vii) Discuss the types of leather.

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**SECTION - D**

**Note :** Attempt any three questions. Each question carries  
10 marks. **3×10=30**

**Q. 4.** Essay Type (more than 500 words) :

- (i) Write the twelve principles of green chemistry.
- (ii) Explain direct and indirect emissions of a carbon foot print.
- (iii) Describe hydrogen based economy in detail.
- (iv) Discuss in detail the natural insecticides.

