

2022

Time : 3 hours

Full Marks : 70

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

*Answer from **all** the Sections as directed.*

Section – A

(Objective Type Questions)

1. Select the most suitable answer from those given or fill in the blanks : $1 \times 10 = 10$

(a) Which are the two main constituents of biogas ?

- ☒ (i) CH_4 and CO_2
- (ii) CH_4 and H_2S
- (iii) CO_2 and H_2
- (iv) H_2S and H_2

(b) High rate of sludge digestion has which of these advantages ?

- (i) Lower capital cost
- (ii) Lesser heat consumption
- (iii) Quick solid destruction

☒ (iv) All of these

(c) Activated sludge process is a part of treatment for which type of waste ?

- (i) Solid
- (ii) Liquid

☒ (iii) Both (i) and (ii)

(iv) None of these

(d) Proper site management for landfill includes :

- (i) Proper drainage
- (ii) Fencing
- (iii) Roads

☒ (iv) All of these

(e) Rotating Biological Contactor is a technology for which treatment of waste water ?

- (i) Primary

- (ii) ☒ Secondary
- (iii) Tertiary
- (iv) None of these
- (f) In vermicomposting earthworms are kept in _____ layer.
- (g) _____ is not a part of municipal waste.
- (h) Thermal treatment of solid waste is done in _____.
- (i) Refuse derived fuels are produced from _____ and commercial degradable waste.
- (j) Specially designed incinerators can handle _____ and clinical waste.

Section – B

(Short-answer Type Questions)

☒ 2. Write short notes on any four of the following :

5×4 = 20

- ☒ (a) Composting
- (b) Landfill design
- ☒ (c) Impact of waste on human health
- ☒ (d) Sources of municipal waste

- ✓ (e) Solid waste from industries
- ✓ (f) Proper collection of municipal waste

Section – C

(Long-answer Type Questions)

Answer any **four** questions of the following :

10×4 = 40

- ✓ 3. Discuss the effect of industrial effluents on water quality and its impact on aquatic life.
- ✓ 4. Describe the sources of solid waste and its classification.
- ✓ 5. Enumerate the transportation and disposal of solid municipal waste.
- 6. Discuss the importance of sewage treatment plants in controlling water quality.
- ✓ 7. What is the importance of industrial waste management ? Explain.
- ✓ 8. Write about the following :
 - ✓ (a) Pyrolysis
 - ✓ (b) Incinerators

GQ – 10/3 (500)

❖
(4) Voc(Sem-IV) — BCA/
Env. Sc. (SEC – 2)
SWM