P. P. SAVANI UNIVERSITY

Fifth Semester of B.Sc. Examination
December-2021
SSES3190–Cleaner Production

09.12.2021, Thursday **Time: 12:30 p.m. to 03:00p.m.** **Maximum Marks: 60**

Instructions:

1. The question paper comprises of two sections.
2. Section I and II must be attempted in separate answer sheets.
3. Make suitable assumptions and draw neat figures wherever required.
4. Use of scientific calculator is allowed.

Section-I (Total Marks - 30)

Q.1 Short Questions **[10]**

1.1 Objectives **[05]**

1.1a __ leads to improved environmental performance, cost savings, and reduction of risks to humans and the environment.

- **A** Cleaner Production
- **B** End of pipe approach
- **C** EIA
- **D** EC

1.1b Which of the following are the end result of cleaner production?

- **A** Zero Waste
- **B** Total use of by-products
- **C** Zero impact on environment
- **D** All of the above

1.1c Which of the following is the often benefit of CP?

- **A** Lowers production costs
- **B** Enhances productivity
- **C** Leads to insurance savings
- **D** Reduces consumer risks

1.1d Which of the following is not a CP?

- **A** Off-site recycling
- **B** By product recovery
- **C** Good house keeping
- **D** Equipment modification

1.1e Better process control is a type of __ CP Tools.

- **A** Good House keeping
- **B** On-site recovery and reuse
- **C** Process change
- **D** Product modification

1.1f Prepare process flow chart comes under ___ of CP methodology

- **A** Step 2-Task 4
- **B** Step 2-Task 5
- **C** Step 2-Task 6
- **D** Step 2-Task 7

1.1g CP methodology has total __ steps.

- **A** 6
- **B** 18
- **C** 17
- **D** 15

1.1h Which of the following CP barriers is external to the companies?

- **A** Difficulty in accessing cleaner technologies
- **B** Lack of information and expertise
- **C** Financial obstacles
- **D** Labor force obstacles

1.1i Labor force obstacles

- **A** United Nations Eligibility programme
- **B** United Nations Enrollment programme
- **C** United Nation Environment Production
- **D** United Nations Environment Programme

1.1j Which of the following is an example of conventional production?

- **A** Processes designed for minimum waste
- **B** Minimum impact on the environment
- **C** Expensive waste treatment, transport and disposal
- **D** Maximum use of by-products

1.2 Answer the Following **[05]**

1.2a Define CP.

1.2b Is diluting constituents to reduce toxicity or hazard is CP practice? Yes/NO

1.2c Define Down cycling.

1.2d Mention Task 7 of CP.

1.2e CP avoids _____ approach.

Q.2 Short Notes (Attempt any two) **[06]**

A Why CP is a Pro-active and integrated Solution to Pollution Prevention?

B Draw and Enlist CP tools.

C How CP could be applied in practice?

Q.3 Explain in detail (Attempt any two) **[14]**

A What is not CP?

B Write a note on CP Hierarchy

C Write a note on CP Methodology.

Section-II (Total Marks - 30)

Q.1 Short Questions [10]

1.1 Objectives [05]

1.1a Good housekeeping helps to create

- **A** Safer workplaces
- **B** Better working conditions
- **C** Greater efficiency.
- **D** All of the above

1.1b Pre audit phase includes

- **A** Walk through audit
- **B** Report preparation
- **C** Primary data gathering
- **D** All of the above

1.1c The primary objective of Energy Audit is to determine

- **A** Ways to reduce energy consumption
- **B** Ways to increase production yield
- **C** Ways to increase production capacity
- **D** Ways to engage stakeholders

1.1d In a comprehensive audit, one of the key elements is

- **A** Stakeholders engagement
- **B** Cost reduction
- **C** Improving production yield
- **D** The energy balance

1.1e Main aims of pre-audit visit is not

- **A** To finalize energy audit team
- **B** To identify the instrumentation required for carrying out the audit
- **C** To create awareness through meetings/ programme
- **D** Identification of Energy Conservation Opportunities

1.1f The information to be collected during the detailed audit includes

- **A** Sources of energy supply
- **B** Energy cost and tariff data
- **C** Both a & b
- **D** Neither a nor b

1.1g Some kinds of accidents commonly caused by bad housekeeping are

- **A** Tripping over loose objects on floors, stairs andplatforms.
- **B** Slipping on greasy, wet or dirty surfaces
- **C** Articles dropping from above
- **D** All of the above

1.1h The Energy Audit would give a positive orientation to

- **A** Energy cost reduction
- **B** Preventivemaintenance
- **C** Quality control programmes
- **D** All of the above

1.1i Full form of VFD

- **A** Variable frequency Drive

B Variable function Drive
C Volume Function Drive
D Volume frequency Drive

1.1j Examples of poor housekeeping that may lead to accidents are
A Congested aisles
B Clean roads
C Arranged cupboards
D Stacked waste containers

1.2 Answer the Following [05]

1.2a Define good housekeeping.

1.2b What is the goal of Energy Management?

1.2c The primary objective of Energy Audit is to determine ways to reduce energy consumptionper unit of product output or to lower operating costs. (True/false)

1.2d A clean, well-ordered, attractive work environment do not set the tone of your establishment. (True/false)

1.2e Good housekeeping is a vital factor in preventingaccidents. (True/false)

Q.2 Short Notes (Attempt any two) [06]

A Explain types of energy audit and preliminary methodology for energy audit.

B What do you understand by Fuel and Energy Substitution? Explain with example.

C Explain Good Housekeeping Checklist.

Q.3 Explain in detail (Attempt any two) [14]

A Discuss elements of good housekeeping.

B Discuss in detail the detailed methodology for energy audit.

C Discuss any one case study to show the impact of cleaner production.