AR13

CODE: 13OE4001 **SET-1**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)
IV B.Tech I Semester Supplementary Examinations, January-2018

AIR QUALITY MANAGEMENT
(Open Elective)
(Civil Engineering)

Time: 3 Hours **Max Marks: 70**

PART-A

ANSWER ALL QUESTIONS **[1 x 10 = 10 M]**

1. a) Give two examples each for primary pollutants and secondary pollutants.
   b) Define aerosol.
   c) Which pollutant causes asphyxiation?
   d) Mention the gases responsible for Acid rains.
   e) What are the disadvantages of simple settling chambers?
   f) Name the pollution control equipment in which both particulates and gaseous pollutants can be removed.
   g) Mention any two dry methods for the removal of sulphur dioxide.
   h) Which gaseous pollutant can be reduced by using Selective Catalytic Reduction method?
   i) What are the ambient air quality standards for particulate matter in India for Industrial area and residential and rural area?
   j) Give any two purposes of stack monitoring.

PART-B

Answer one question from each unit **[5x12=60M]**

UNIT-I

2. a) Explain the following sources of air pollution with suitable examples. 6 M
      i) Stationary sources and mobile sources
      ii) Line, point and area sources
      iii) Natural and artificial sources
   b) Explain London smog episode and Bhopal Gas tragedy. 6 M

(OR)

3. a) Define air pollution and explain its scope and significance in the present day scenario. 6 M
   b) Enumerate important gaseous pollutants. Describe their sources and characteristics. 6 M

UNIT-II

4. a) Explain the effects of various air pollutants on human beings. 6 M
   b) Briefly discuss the causes, effects and remedial measures of Ozone layer depletion. Write a short note on heat island effect. 6 M

(OR)

5. a) Discuss the effects of air pollution on various materials. 6 M
   b) Explain the effects of air pollution on art treasures. 6 M

UNIT-III

6. a) Explain the following techniques to control the particulate matter with suitable examples: 6 M
      i) Process change
      ii) Equipment modification or replacement
   b) Describe the working principle of an Electrostatic Precipitator with a neat diagram. 6 M
      What are its applications?

(OR)

7. a) Explain the principle and working of a Cyclone separator. Draw a typical cyclone with all necessary dimensions for its design. 6 M
   b) A fabric filter is to be constructed using bags that are 0.25 m in diameter and 6.0 m long. The baghouse is to receive 15 m^3/s of air, and the appropriate filtering velocity has been determined to be 2.0 m/min. Determine the number of bags required for a continuously cleaned operation. 6 M

UNIT-IV

8. Explain any four wet scrubbing processes for the removal of sulphur dioxide with relevant block diagrams and chemical equations. 12 M

(OR)

9. a) Explain any three methods for the control of NO_2 by modification of operating and design conditions. 6 M
   b) Explain absorption methods for the control of NO_2 with relevant chemical equations. 6 M

UNIT-V

10. Draw a neat sketch of sampling train for stack monitoring. Label all the parts. Explain procedure for stack monitoring. 12 M

(OR)

11. a) Draw a typical High Volume Air sampler for monitoring SPM and Gaseous pollutant in ambient atmosphere. Explain sampling procedure for SPM and Gaseous pollutants using High Volume Air Sampler. 8 M

    b) What is meant by isokinetic, sub-isokinetic and super- isokinetic sampling? Why isokinetic sampling is essential for collecting particulates. 4 M

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CODE: 13OE4007 **SET-1**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

IV B.Tech I Semester Supplementary Examinations, January-2018

RENEWABLE ENERGY

(Electrical & Electronics Engineering)

Time: 3 Hours **Max Marks: 70**

PART-A

ANSWER ALL QUESTIONS **[1 x 10 = 10 M]**

1. a) What is the difference between a solar collector and a solar panel?
   b) What is the approximate flux density of solar radiation in W/m^2 onto a collector facing the Sun on the Earth's surface on a sunny day?
   c) Why do most solar collectors include a glass cover? Why glass and not polythene?
   d) Name two uses of wind power other than electricity generation.
   e) Why are large wind turbine blades often twisted?
   f) Identify two social advantages of utilizing biofuels
   g) Why geothermal energy is considered a renewable energy source?
   h) What is the ideal location for a tidal turbine farm?
   i) What is Peltier effect?
   j) Distinguish between battery and fuel cell?

PART-B

Answer one question from each unit **[5x12=60M]**

UNIT-I

2. (a) Define and differentiate the surface azimuth angle and solar azimuth angle. [4M]
   (b) State and explain the empirical equation for estimating the availability of solar radiation. [8M]

(OR)

3. (a) Define and differentiate local clock time and local apparent time. [4M]
   (b) Explain the solar radiation geometry. [8M]

UNIT-II

4. (a) Explain the working mechanism of a solar cell. [4M]
   (b) Explain different types of solar concentrating collectors. [8M]

(OR)

5. (a) Sketch and explain the principle of solar water heater. [6M]
   (b) Sketch and explain the process of solar distillation. [6M]

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UNIT-III

6. (a) Discuss different types of rotors used in wind turbines with the help of a neat sketch. [8M]
   (b) Discuss the favourable sites for installing windmills. [4M]

(OR)

7. (a) What is a biomass? What are the different resources used to extract biomass energy. [6M]
   (b) Discuss the combustion characteristics of bio-gas and justify how will it be suitable for cooking. [6M]

UNIT-IV

8. (a) What is bio-fouling and why is it a challenge for OTEC systems? [6M]
   (b) What are the various types of geothermal resources available? [6M]

(OR)

9. (a) Sketch and explain vapour dominated geothermal power plant. [6M]
   (b) What is wave energy? Explain the factors affecting wave energy. [6M]

UNIT-V

10. (a) Explain the constructional features of MHD power generation system. [6M]
    (b) Differentiate between electrical efficiency and thermal efficiency of fuel cell. [6M]

(OR)

11. (a) Explain the principle and working of MHD accelerator. [6M]
    (b) Briefly explain the principle of a fuel cell by taking a hydrogen-oxygen fuel cell. Which factors are responsible for limiting the efficiency of such a cell? [6M]

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CODE: 13OE4009 **SET-2**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

IV B.Tech I Semester Supplementary Examinations, January-2018

TOTAL QUALITY MANAGEMENT

(Open Elective)

Time: 3 Hours **Max Marks: 70**

PART-A

ANSWER ALL QUESTIONS **[1 x 10 = 10 M]**

1. a) Define quality
   b) List out the barriers of TQM
   c) What is performance appraisal?
   d) Highlight the significance of continuous improvement techniques
   e) What is Terotechnology
   f) Highlight the significance of control cahrts
   g) What is HOQ?
   h) Write A brief note on Poka Yoke
   i) Discuss the need of quality systems
   j) What are the benefits of ISO 9000

PART-B

Answer one question from each unit **[5x12=60M]**

UNIT-I

2. a) Differentiate between quality thinking and TQM **[6 M]**
   b) Explain the various stages of evolution of TQM **[6 M]**

(OR)

3. a) Discuss about the Deming's philosophy on TQM **[6 M]**
   b) Write a detailed note on the development of TQM framework in organizational implementation **[6 M]**

UNIT-II

4. a) Explain the significance of employee involvement in TQM organizations **[6 M]**
   b) How continuous process improvement is helpful in the development of organizations. Give suitable example to explain **[6 M]**

(OR)

5. a) Describe the steps involved in the PDCA cycle. Also discuss how it can be interlined with KAIZEN **[6 M]**
   b) Discuss the basic concepts and strategy involved in the performance measure. **[6 M]**

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UNIT-III

6. a) Classify the different types of control charts used in statistical process control. Also draw control charts by giving an example. **[6 M]**

   b) Highlight the significance and measurement procedure of process capability **[6 M]**

(OR)

7. a) Explain the Significance of Statistical Process Control (SPC) **[6 M]**

   b) What are the principles and applications of Total Productive Maintenance **[6 M]**

UNIT-IV

8. a) How information can be organized in the Quality Function Development (QFD) **[6 M]**

   b) Classify the different stages of failure modes in FMEA with suitable examples **[6 M]**

(OR)

9. a) Explain the seven statistical tools in TQM **[6 M]**

   b) Discuss the steps involved in Bench Marking and explain. **[6 M]**

UNIT-V

10. a) Explain about the various clauses of the ISO 9000 series and standards **[6 M]**

    b) Discuss about how quality auditing is helpful in the development of an organization **[6 M]**

(OR)

11. Explain the specific requirement of the following **[12 M]**
    a) TS 16949 b) ISO 14000

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CODE: 13OE4002 **SET-1**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

IV B.Tech I Semester Supplementary Examinations, January-2018

CYBER LAWS
(Open Elective)

Time: 3 Hours **Max Marks: 70**

PART-A

ANSWER ALL QUESTIONS **[1 x 10 = 10 M]**

1. a. What is section 80 of the IT act 2000?
   b. Define FIR.
   c. What is Virus?
   d. Define cryptography.
   e. What is PE Principle?
   f. List out taxation policies in India.
   g. What is digital Signature?
   h. What is CA?
   i. Did the cyber consumers covered under the consumer protection?
   j. Define RTP.

PART-B

Answer one question from each unit **[5x12=60M]**

UNIT-I

2. Explain in detail about cognizable and Non-cognizable offences.

(OR)

3. Discuss about the scenario of "Arrest for about to commit an offence: under the IT act and Justify the statement "Arrest but no punishment".

UNIT-II

4. Explain the terms Hacking and Hacktivist. Detail the how section 66 of IT act deals with hacking.

(OR)

5. What might be the reasons for teenagers turning into cybercriminals? Explain with a case study.

UNIT-III

6. Explain the concept of taxation policies in India.

(OR)

7. Discuss about source versus residence and classification between Business Income and Royalty.

UNIT-IV

8. Explain the application, issuance, suspend and revoke procedures of Digital Signature Certificates.

(OR)

9. Explain about E- Governance in the India.

UNIT-V

10. Explain how CPA deals with restrictive and unfair trade practices .

(OR)

11. Explain how Goods and Services are illustrated under CPA and Compare Contract of Service vs Contract for Service.