AR16

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)
IV B.Tech II Semester Supplementary Examinations, November-2020
GROUND WATER DEVELOPMENT AND MANAGEMENT
(Civil Engineering)

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

Answer ONE Question from each Unit
All Questions Carry Equal Marks
All parts of the Question must be answered at one place

UNIT-I

1. a) Describe vertical distribution of groundwater   7M
   b) Give an account of classification of rocks based on porosity and permeability with   7M
      suitable examples

(OR)

2. a) What is flownet? Write the principles and uses of flownets.   7M
   b) Explain the factors which influence groundwater movement in the zone of   7M
      saturation.

UNIT-II

3. a) Derive an expression for discharge from a well fully penetrating a unconfined   7M
      aquifer
   b) Explain Theis method of determining the aquifer parameters using the pumping   7M
      test data.

(OR)

4. a) Explain Jacobs method of determining the aquifer parameters using the pumping   7M
      test data.
   b) Explain about leaky aquifers   7M

UNIT-III

5. a) What are seismic methods of prospecting? Explain its principle with a neat sketch   7M
   b) Explain the necessity and importance of geophysical investigations   7M

(OR)

6. a) Discuss the planning and execution of aerial photography   7M
   b) Explain the classification of aerial photography   7M

UNIT-IV

7. a) Explain the concept of artificial recharge. Write a notes on the advantages of   7M
      artificial recharge
   b) List out the different methods of artificial recharge. Explain any two methods.   7M

(OR)

8. a) Explain briefly flooding method of artificial recharge   7M
   b) Explain about planning of artificial recharge projects   7M

UNIT-V

9. a) What are the different levels of studies recognized in groundwater basin   7M
      investigations
   b) Explain groundwater basin management   7M

(OR)

10. a) What is saline water intrusion? Explain the occurrence of saline water intrusion   7M
    b) Describe the structure of fresh-salt water interface   7M

AR16

CODE: 16ME4035　　　　　　　　　　　　　　　　**SET-2**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)
IV B.Tech II Semester Supplementary Examinations, November-2020

UNCONVENTIONAL MACHINING PROCESSES
(Mechanical Engineering)

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

Answer ONE Question from each Unit
All Questions Carry Equal Marks
All parts of the Question must be answered at one place

UNIT-I

1. a) Classify the modern machining processes in detail. 　　　　6M
   b) Explain the reasons for the development of Unconventional Machining Process. Discuss about the criteria recommended in selection of these processes. 　　8M

(OR)

2. a) Discuss any Three influence process parameters and applications of USM 　　8M
   b) Discuss in detail the following 　　6M
      i) What is ultrasonic machining?
      ii) What is magnetostriction effect

UNIT-II

3. a) Explain the principle of AJM. Mention some of the specific applications. 　　6M
   b) Discuss in detail about the AJM process variables that influence the rate of material removal and accuracy in the machining. 　　8M

(OR)

4. Explain the working principle and process parameters in WJM processes. List the applications, advantages and limitations of WJM 　　14M

UNIT-III

5. a) Please identify the principle of ECM. How does it differ from electroplating? 　　6M
   b) Describe the chemistry involved in ECM process and explain the process parameters. 　　8M

(OR)

6. a) What is the purpose of etchant used in CHM? Give some examples 　　6M
   b) Discuss about the electrochemical honing process and application in detail 　　8M

UNIT-IV

7. a) Explain the principle of electrical discharge machining with neat sketch. 　　8M
   b) Explain the flushing techniques in detail on EDM process. 　　6M

(OR)

8. a) Describe the wire cut EDM equipment, its working and applications. 　　8M
   b) What are functions of dielectric fluid used in EDM? 　　6M

UNIT-V

9. Explain with neat sketch construction, working principle of the Electron Beam Machining Process 　　14M

(OR)

10. a) Explain mechanism of material removal of the Plasma Arc Machining Process. 　　8M

    b) Explain the applications, advantages and disadvantages of PAM. 　　6M

AR16

UNIT-I

1. a) What are the characteristics of MANETs?   7M
   b) Draw the schematic diagram of the adhoc wireless Internet and explain.   7M
   (OR)
2. List the issues in adhoc wireless networks and explain any three of them.   14M

UNIT-II

3. a) What are the main issues that need to be addressed while designing a MAC   7M
      protocol for ad hoc wireless networks?
   b) Explain the packet transmission procedure in MACA.   7M
   (OR)
4. Explain in detail about contention based MACAW protocol.   14M

UNIT-III

5. a) List the characteristics of a routing protocol for ad hoc wireless networks.   7M
   b) List the advantages and disadvantages of ZRP routing protocol.   7M
   (OR)
6. Explain in detail about WRP routing protocol.   14M

UNIT-IV

7. a) Classify the sensor network protocols.   7M
   b) Explain the issues and challenges in designing a sensor network.   7M
   (OR)
8. Explain the layered architecture of sensor networks.   14M

UNIT-V

9. a) Explain the multi-lateration (ML) techniques used in sensor network localization   7M
      algorithms.
   b) Write short notes on Real-Time Communication in sensor networks.   7M
   (OR)
10. Discuss on synchronization among nodes of sensor networks.   14M