

B.E. (Mechanical Engineering) Eighth Semester (C.B.S.)  
**Elective-III : Advanced Manufacturing Techniques**

P. Pages : 2

Time : Three Hours



NRJ/KW/17/4726

Max. Marks : 80

- Notes :
1. All questions carry marks as indicated.
  2. Solve Question 1 OR Questions No. 2.
  3. Solve Question 3 OR Questions No. 4.
  4. Solve Question 5 OR Questions No. 6.
  5. Solve Question 7 OR Questions No. 8.
  6. Solve Question 9 OR Questions No. 10.
  7. Solve Question 11 OR Questions No. 12.
  8. Due credit will be given to neatness and adequate dimensions.
  9. Diagrams and chemical equations should be given whenever necessary.
  10. Illustrate your answers whenever necessary with the help of neat sketches.

1. A) Explain Non-Traditional Machining process with detailed classification. 7

B) Explain the principle of High speed Grinding along with its application. 6

**OR**

2. A) Explain the manufacturing Trends, manufacturing challenges and need of advanced manufacturing technology. 7

B) Explain Hot and Cold Machining. 6

3. A) Explain the mechanism of Abrasive jet machining with neat sketch. 7

B) Explain Ultrasonic Machining process its parameters and control. Also explain its effect on material. 7

**OR**

4. A) Explain variables that influence rate of Metal removal and accuracy of abrasive jet machining. 7

B) Explain with neat sketch water jet machining process, what are its applications. 7

5. A) Explain with neat sketch Electric Discharge Machining with its application, advantages and disadvantages. 7

B) Define Laser. Also describe Laser Beam Machining with neat sketch along with its Limitations. 6

**OR**

6. A) Explain with neat sketch Electrochemical Machining, State its advantages, Limitations and applications. 7

- B) Explain with neat sketch the process of Electro Beam Machining along with advantages and applications. 6
7. A) Explain the process of Electric Resistance welding and its types? 6
- B) Explain with neat sketch Atomic Hydrogen welding, State its advantages and applications. 7

**OR**

8. A) Explain the process of plasma Arc welding with neat sketch. 7
- B) Differentiate between TIG & MIG welding process. 6
9. A) What is Friction welding? Explain the process with neat sketch along with its application. 7
- B) Discuss the Economic and Application of Non-Traditional process of welding. 6

**OR**

10. A) Discuss the Recent Development in Non-Traditional process for welding. 7
- B) Explain in brief the principle of solid phase welding and its applications. 6
11. A) Explain the process of Vacuum Mould Casting. Give its application. 7
- B) Explain the process of Evaporative pattern casting 7

**OR**

12. A) Explain the process of centrifugal casting with its application. 7
- B) Describe the process of Slush casting with neat sketch. 7

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  7. Solve Question 11 OR Questions No. 12.
  8. Due credit will be given to neatness and adequate dimensions.
  9. Assume suitable data whenever necessary.

1. a) Write with neat sketch of Hot & cold machining process and also write application of it. 7  
b) What is non-traditional machining process. Explain its need and classification in brief. 6

**OR**

2. a) Write with neat sketch about High speed grinding. Also write application of high speed grinding. 6  
b) Discuss in details the historical development, economics and application of non-traditional machining process. 7
3. a) Explain the ultrasonic machining process, Also write mechanics of USM, Advantages and application. 7  
b) Explain the process of water jet machining process with its advantages & applications. 6

**OR**

4. a) Explain with neat sketch Abrasive jet machining process with mechanics, advantages & application. 7  
b) Explain the process parameters and control, effect of USM on materials. 6
5. a) Explain with neat sketch Electron Beam machining. Also Write advantages, disadvantages a application of it. 7  
b) Write with neat sketch process of plasma Arc machining. Give its advantages and application. 7

**OR**

6. a) Explain with neat sketch Electrical discharge machining. Write its advantages and application. 7

- b) Explain the process of LASER Beam machining. Give its advantages and application. 7
7. a) Explain with neat sketch process of oxy acetylene pressure welding. Also explain different types of flames. Give its advantages & application. 7
- b) Explain the process of resistance welding with any two process of resistance welding. 7

**OR**

8. a) Write with neat sketch Atomic Hydrogen welding with advantages, disadvantages & application. 7
- b) Explain with neat sketch submerge Arc welding? Also give its advantages, disadvantages & Applications. 7
9. a) What do you mean by solid phase welding? Explain the process of friction welding with its limitations. 6
- b) Explain the process of Ultra sonic welding. Give its advantages & application. 7

**OR**

10. a) Explain the Economics and application of non-traditional welding process. 6
- b) Differentiate between solid phase welding with Arc welding. Write about recent development in friction welding. 7
11. a) Explain with neat sketch ceramic shell casting, write its application. 6
- b) Write with neat sketch centrifugal casting with its advantages & limitations. 7

**OR**

12. a) What do you mean by evaporative pattern casting? Explain the process with the neat sketch. Also write its applications. 7
- b) Explain the process of continuous casting with its limitations. 6

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