

**B.TECH. DEGREE EXAMINATIONS: NOV/DEC 2010**

Third Semester

**TEXTILE TECHNOLOGY (FASHION TECHNOLOGY)**

U07ME307: Basics of Mechanical Engineering

**Time: Three Hours**

**Maximum Marks: 100**

**Answer ALL Questions:-**

**PART A (10 x 1 = 10 Marks)**

1. Which is true for reversible polytropic process
  - (a) temperature remains constant
  - (b) entropy remains constant
  - (c) internal energy remains constant
  - (d) enthalpy remains constant
2. Entropy change depends on
  - (a) heat transfer
  - (b) mass transfer
  - (c) thermodynamic state
  - (d) change of pressure and volume
3. Moderator in nuclear plants is used to
  - (a) reduce temperature
  - (b) extract heat from nuclear reaction
  - (c) control the reaction
  - (d) cause collision with the fast moving neutron to reduce their speed
4. Film boiling occurs at
  - (a) very low pressure
  - (b) atmospheric pressure
  - (c) medium pressures
  - (d) very high pressures
5. In loop scavenging, the top of the piston is
  - (a) flat
  - (b) contoured
  - (c) slanted
  - (d) depressed
6. Cetane
  - (a) has zero cetane number
  - (b) has 100 cetane number
  - (c) helps detonation
  - (d) is a straight chain paraffin
7. Neutral flame has
  - (a) 1 zone
  - (b) 2 zones
  - (c) 3 zones
  - (d) 4 zones
8. Wire is fabricated by the following process
  - (a) drawing
  - (b) extrusion
  - (c) piercing
  - (d) rolling
9. Gear box is used to
  - (a) To produce torque
  - (b) for speed reduction
  - (c) to obtain variable speed
  - (d) To increase efficiency of system
10. Belt slip may occur due to
  - (a) Heavy load
  - (b) loose belt
  - (c) driving pulley too small
  - (d) all of the above

**PART B (10 x 2 = 20 Marks)**

11. State the first law of thermodynamics
12. What is meant by dryness fraction?
13. Define Nuclear Fission
14. What is the function of Moderator?
15. Define the term: Compression Ratio.
16. Define relative humidity
17. What is meant by brazing?
18. What are all the types of milling machines?
19. What is the difference between simple and compound gear trains?
20. What is the use of flywheel?

**PART C (5 x 14 = 70 Marks)**

21. (a) State and prove the corollaries of second law of thermodynamics  
(OR)  
(b) Derive the energy equation for open system
22. (a) Explain working principle of Nuclear Power plant With Neat sketch.  
(OR)  
(b) (i) With the help of a neat sketch explain the working of Reciprocating Pump (7)  
(ii) With the help of a neat sketch explain the working of Impulse Turbine (7)
23. (a) Describe the principal parts and functions of a Four Stroke Diesel engine With Neat Sketch  
(OR)  
(b) Explain the principle and working of the vapour absorption refrigeration System.
24. (a) Explain the working principle of arc and gas welding process with neat sketches.  
(OR)  
(b) Briefly discuss about the following processes with neat sketch (i) Extrusion (ii) forging (iii) rolling (iv) drawing.
25. (a) Explain about the types of drives with neat sketches  
(OR)  
(b) Explain about the types of gears and their uses with neat sketches.

\*\*\*\*\*