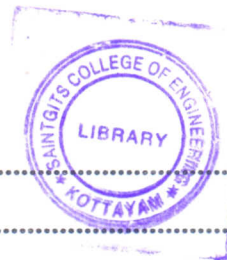


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Reg. No.....

Name.....



B.TECH. DEGREE EXAMINATION, NOVEMBER 2014

Third Semester

Branch : Electrical and Electronics Engineering

EE 010 306—MECHANICAL TECHNOLOGY (EE)

(2010 Admission onwards—New Scheme)

[Regular/Improvement/Supplementary]

Time : Three Hours

Maximum : 100 Marks

Part A

*Answer all questions.
Each question carries 3 marks.*

1. Differentiate between Newtonian and Non-Newtonian fluids.
2. Differentiate between Eulerian and Lagrangian approaches of fluid flow.
3. Give a comparison between Pelton wheel and Francis turbines.
4. Define specific speed of a centrifugal pump.
5. Define the term "Net positive suction head".

(5 × 3 = 15 marks)

Part B

*Answer all questions.
Each question carries 5 marks.*

6. Briefly explain the importance of viscosity in fluid motion.
7. List the assumptions made in the derivation of Bernoulli's equation.
8. How can cavitation be avoided in reaction turbine ?
9. Briefly discuss the working of an airlift pump.
10. Discuss the applications of positive displacement pumps.

(5 × 5 = 25 marks)

Part C

*Answer all questions.
Each question carries 12 marks.*

11. Define and explain Pascal's law. What are the applications of this law ?

Or

Turn over

12. With neat sketch, explain the analytical method for determining meta-centric height of a floating body ?
13. Describe with the help of sketch the construction, operation and use of a Pitot tube.

Or

14. Derive an expression for loss of head due to friction in pipes. How will you determine friction factors for laminar and turbulent flow ?
15. What are the uses of a draft tube ? Describe with neat sketches different types of draft tubes.

Or

16. What is specific speed of a turbine ? Derive expressions and state its significance in the study of hydraulic machines.
17. Draw and explain the significance of : main, operating and ISO efficiency characteristic curves of a centrifugal pump.

Or

18. Discuss the following, with neat sketches :

- (a) Hydraulic balancing.
- (b) Wear rings.
- (c) Priming.

19. What are rotary axial and rotary radial piston pumps ? What are their applications ?

Or

20. Differentiate between :

- (a) Single acting and double acting reciprocating pump.
- (b) Single cylinder and double cylinder reciprocating pump.
- (c) Gear pump and vane pump.

(5 × 12 = 60 marks)

