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LNCT UNIVERSITY, BHOPAL

Enrolment No.....

CS-204
B. TECH (CSE) I SEMESTER EXAMINATION [JAN-2024]
MECHANICAL ENGINEERING

Maximum Marks: 70 **Time Allowed: 3Hours**

Note:- Attempt all questions internal choice are given.

(SECTION –A)

1. Short Answer Type Question (Attempt Any Five) [5x6=30]

i) Enlist important mechanical properties of engineering materials. Define any three with suitable example

ii) Describe the construction and use of a Dial gauge.

iii) Explain the first and second law of thermodynamics.

iv) Discuss the construction and working principle of vernier caliper .

v) What do you understand by welding? Explain the procedure of gas welding.

vi) Write short notes on Newton's law of viscosity

vii). What is composition of carbon steel. Give its application.

(SECTION –B)

2 Long Answer Type Question (Attempt Any Four). [04x10=40]

i. 50 lit/s water is flowing down through an inclined conical pipe of diameter 500mm and 250mm at the inlet and outlet respectively and the inlet is raised by 1 unit vertical for every 25 units of the pipe length. If the length of pipe is 100 m and the pressure at the inlet is 2.5 bar, determine the pressure at the outlet of the pipe.

ii. Describe the construction and use of a Sine bar.

iii. Calculate the equivalent evaporation of boiler per kg of coal fired. if the boiler produces 50000kg of wet steam per hour with a dryness fraction of 0.95 and operating at 10 bar .the coal burnt per hour in furnace is 5500kg and feed water temperature is 40° c. (from steam table at 10 bar hf=762.79kj/kg ,hfg=2015.29kj/kg)

iv. With suitable diagram explain the iron carbon equilibrium diagram and point out the important reactions

v. Explain the working principle of Lathe machine with suitable diagram. Also explain any three operations performed on Lathe machine.