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DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/MANAGEMENT/ COMMERCIAL PRACTICE, APRIL - 2025

MECHANICAL ENGINEERING

[Maximum marks: 100] [Time: 3 Hours]

PART – A
Maximum marks: 10

I. (Answer ***all*** the questions in one or two sentences. Each question carries **2** marks)

1. Define piezometer.
2. Name the energy of fluid in motion.
3. List the parts of a boiler.
4. List the classification of hydraulic turbine.
5. Define Uniform flow. (5 x 2 = 10)

PART – B
Maximum marks: 30

II. (Answer any ***five*** of the following questions. Each question carries **6** marks)

1. State atmospheric pressure and gauge pressure.
2. Explain Datum head and Kinetic head.
3. Explain Chezys formula and Darcys formula.
4. Compare fire tube and water tube boiler.
5. Draw a neat sketch of four stroke petrol Engine.
6. List difference between Reaction turbine & impulse turbine.
7. Explain the working of Reciprocating pump. (5 x 6 = 30)

PART – C
Maximum marks: 60

(Answer ***one full*** question from each unit**.** Each full question carries **15** marks)

UNIT – I

III. (a) Draw and explain U tube manometer (8)

(b) A simple U tube manometer containing mercury is connected to a pipe in which a fluid of specific gravity 0.8 and having a vacuum pressure is flowing. The

other end of the manometer is open to atmosphere. Find the vacuum pressure in pipe, if the difference of mercury level in the two limbs is 400mm and the height of fluid in the left from the centre pipe is 150mm below. (7)

OR

IV. (a) Explain about types of liquid flow. (8)

(b) Briefly describe types of tube gauges. (7)

UNIT - II

V. (a) Explain Bernoulli's theorem & list 2 assumptions of it. (8)

(b) Define water hammer and its effects. (7)

OR

VI. (a) List the types of liquid flow, Explain Laminar flow & Turbulent flow. (8)

(b) Write short note on practical applications of Bernoulli's theorem. (7)

UNIT - III

VII. (a) Draw a neat sketch of IC Engine and explain. (8)

(b) Compare Petrol Engine and diesel engine. (7)

OR

VIII. (a) List the classification of turbines. (8)

(b) List the advantages of steam turbine over steam engine. (7)

UNIT – IV

IX. (a) Compare Centrifugal pump and Reaction turbine. (8)

(b) Explain working of Pelton wheel. (7)

OR

X. (a) Explain the working Francis turbine. (8)

(b) Define Brake Power, Shaft Power and Overall efficiency. (7)
