

17413

16117

2 Hours / 50 Marks

Seat No.

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- Instructions* – (1) All Questions are *Compulsory*.
(2) Illustrate your answers with neat sketches wherever necessary.
(3) Figures to the right indicate full marks.
(4) Assume suitable data, if necessary.
(5) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. **Attempt any NINE of the following:** **18**
- a) List any four power loss in turbines.
 - b) State two provisions under Boiler Act for remedial measure.
 - c) List any four applications of I.C. engine.
 - d) Define swept volume and pressure ratio.
 - e) State uses of compressed air.
 - f) State four applications of rotary compressor.
 - g) What is the effect of leakage in suction pipe on the discharge in centrifugal pump?
 - h) Define:
 - (i) Manometric head
 - (ii) Static head
 - i) Give classification of reciprocating pump.
 - j) Enlist four advantages of super critical boiler.
 - k) Define boiler and state its types.

P.T.O.

- l) Classify the turbines in detail.
- m) State the need of testing I.C. engine.
- n) List the different types of pumps.
- o) What do you mean by reaction type turbine?

2. Attempt any FOUR of the following: 16

- a) Draw a neat labelled sketch of Benson boiler.
- b) Sketch and explain Bondix drive.
- c) Explain working of single stage reciprocating compressor with P-V diagram.
- d) Draw sketches of different types of impellers used in centrifugal pumps and state their uses.
- e) Compare impulse and reaction turbine.
- f) Explain Willan straight line method for measurement of friction power.
- g) Classify the I.C. engines in details.

3. Attempt any FOUR of the following: 16

- a) Differentiate boiler and super critical boiler.
 - b) State the fault and remedies for the following causes:
 - (i) Piston seizure
 - (ii) Engine overheating
 - (iii) Engine turn slowly
 - (iv) No spark - at spark plug
 - c) Explain method of energy saving in air compressor.
 - d) Explain with a neat sketch vane pump.
 - e) Differentiate reciprocating and centrifugal compressor.
 - f) Explain working of double acting reciprocating pump with θ -Q diagram
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