17413

11819

2 Hours / 50 Marks Seat No. | | | | | | | | |

Instructions : *(1)* ***All*** *questions are* ***compulsory****.*
(2) Answer ***each*** *next main question on a* ***new*** *page.*
(3) Illustrate your answers with neat sketches ***wherever*** *necessary.*
(4) Figures to the ***right*** *indicate* ***full*** *marks.*
(5) Assume suitable data, if ***necessary****.*
(6) Use of Non-programmable Electronic Pocket Calculator is ***permissible****.*
(7) Mobile Phone, Pager and any other Electronic Communication devices are ***not permissible*** *in Examination Hall.*

Marks

1. Attempt **any nine** of following : **18**

a) Define critical and supercritical boilers.

b) Define boiler efficiency. State the types of boiler efficiencies.

c) Define Bottom Dead Centre and clearance volume in I.C. engine.

d) State any four uses of compressed air.

e) State the function of impeller and casing in centrifugal pumps.

f) Draw a neat sketch showing variation of pressure and velocity of steam in simple impulse turbine.

g) State any four different power loss in Turbine.

h) Define compression ratio and swept volume in air compressors.

i) State any four applications of pumps.

j) Classify I.C. engines on the basis of :

1) Method of ignition

2) Thermodynamic cycle.

k) State the basic difference between compressor and pump.

l) State any two provisions in Boiler Act for remedial measures.

m) How boiler efficiency differs from seasonal efficiency ?

P.T.O.

Marks

2. Attempt **any four** of the following : **16**

a) Explain the construction and working of Benson Boiler.

b) State the classification of pumps.

c) State any two faults and remedies for less efficiency of I.C. engine.

d) Differentiate between single stage and multistage compressors.

e) Explain with neat sketch working of double acting reciprocating pump.

f) Differentiate between impulse and reaction turbines.

3. Attempt **any four** of the following : **16**

a) Describe Economizer in super critical boilers.

b) Explain Lobe type compressor in brief.

c) State the possible cause and remedies for excessive noise in operation of a compressor.

d) State the types of casing and describe any one in brief.

e) Draw a neat sketch of starting motor of I.C. engine.

f) Describe Morse test in brief.