

Common Instructions to Candidates :

- 1) This is a question cum answer paper booklet.
- 2) This question cum answer booklet contains two sections.
- 3) Space is provided to write answers below each question. Answer should be written within the space provided.
- 4) This question paper has 4 questions in Section - A and 3 questions in Section - B and together there are 7 questions.
- 5) Candidate should not write the answer with pencil. Answer written with pencil will not be evaluated. (Except graphs, diagrams & maps).
- 6) In case of multiple choice, fill in the blanks and matching questions, scratching, rewriting & marking is not allowed. Answers with such errors will not be evaluated.

SECTION - A**Instruction :**

Answer Question No. 1 and any two full questions of the remaining.

1. Fill in the blanks with the appropriate word(s) selecting from the choices given in the brackets. [10 x 1 = 10]
 - a) Cleat wirings are used for _____ purpose.
(temporary, permanent, temporary & permanent).
 - b) The core of a transformer is made of _____
(cast iron, silicon steel, mild steel).
 - c) The field winding of a d.c.shunt motor has _____ turns.
(equal, less, more).
 - d) Commutator segments are made of _____
(copper, silver, brass).
 - e) A d.c. generator converts _____
(electrical to mechanical energy, mechanical to electrical energy, chemical to electrical energy).

- f) The pump is a _____ device.
(mechanical, hydraulic, electrical).
- g) Spark plug is used in _____ engine.
(diesel, oil, petrol).
- h) _____ is used to save the boiler against over heating.
(Economiser, Fusible plug, Super heater).
- i) _____ is the most commonly used type of impulse turbine.
(Francis turbine, Pelton turbine, Keplan turbine).
- j) When a rotary motion is to be converted in to a linear motion _____ arrangement is used.
(Spur gear, rack and pinion, worm and worm wheel).

2. a) Explain with a figure the working of transformer. [5]
- b) State Fleming's right hand rule. [3]
- c) What is a transformer? [2]
3. a) Explain with a neat sketch of electric iron box. [5]
- b) Name the types of D.C, generator. [3]
- c) What is back emf? [2]
4. Write short notes on any two of the following [2 x 5 = 10]
- a) Conduit wiring.
- b) Alternator.
- c) Incandescent lamp.

SECTION - B**Instruction :**

Answer any two full questions of the following.

5. a) What are boiler mountings? [2]
- b) Name any four boiler accessories. [2]
- c) Sketch and label all the parts of a Babcock and wilcox boiler. [6]
6. a) How are I.C. engines are classified? [2]
- b) Compare a petrol engine with a diesel engine. [2]
- c) Draw a neat sketch of two stroke petrol engine and describe working principle in brief. [6]
7. a) What is a pump? How are they classified? [3]
- b) What is the principle of operation of water turbine? [2]
- c) Explain with a neat sketch name all the parts, the working of a reciprocating pump. [5]