

ಒಟ್ಟು ಪ್ರಶ್ನೆಗಳ ಸಂಖ್ಯೆ : 7 ]

[ ಒಟ್ಟು ಮುದ್ರಿತ ಪುಟಗಳ ಸಂಖ್ಯೆ : 3

Total No. of Questions : 7 ]

[ Total No. of Printed Pages : 3

ಸಂಕೇತ ಸಂಖ್ಯೆ : **J.T.S. – I**

Code No. : **J.T.S. – I**

ವಿಷಯ : ಎಲಿಮೆಂಟ್ಸ್ ಆಫ್ ಇಂಜಿನಿಯರಿಂಗ್ – I

Subject : **ELEMENTS OF ENGINEERING – I**

ದಿನಾಂಕ : 08 - 04 - 2008

Date : 08 - 04 - 2008

ಸಮಯ : ಬೆಳಿಗ್ಗೆ 10-30 ರಿಂದ ಮಧ್ಯಾಹ್ನ 1-00 ರವರೆಗೆ ]

[ ಪರಮಾವಧಿ ಅಂಕಗಳು : 50

Time : 10-30 A.M. to 1-00 P.M. ]

[ Max. Marks : 50

*Note* : Answer questions from Sections **A** & **B** as per the instructions given under them.

### SECTION – A

*Instruction* : Answer Question **No. I** and any *two* full questions of the remaining.

I. Fill in the blanks with the appropriate word(s) choosing from the ones given in the brackets : 10 × 1 = 10

a) Copper is a good ..... material.

( *insulator, semiconductor, conductor* )

b) The core of a transformer is made of .....

( *silicon steel, cast iron, cast steel* )

c) Commutator segments are made of .....

( *silver, copper, aluminium* )

[ Turn over

- d) Direction of rotation of a dc motor is given by ..... .  
( *Fleming’s left hand rule, Cork screw rule, Fleming’s right hand rule* )
  - e) ..... lamp is used in the film projector.  
( *Arc, Incandescent, Mercury vapour* )
  - f) Babcock and Wilcox boiler is a ..... boiler.  
( *fire-tube, water-tube, water-tube and fire-tube* )
  - g) Centrifugal pump works on the principle of ..... force.  
( *centrifugal, reciprocating, kinetic* )
  - h) ..... is used to save the boiler against over heating of boiler.  
( *Fusible plug, Safety valve, Blow off valve* )
  - i) Spark plug is used in ..... engines.  
( *diesel, diesel and petrol, petrol* )
  - j) ..... pump can handle dirty water.  
( *Reciprocating, Centrifugal, Tube well* )
- II. a) Give any two examples for water-tube boiler and fire-tube boiler. 3
- b) Draw a neat sketch of simple vertical boiler and label its important parts. 5
- c) List the important boiler accessories. 2
- III. a) Define heat engine. 2
- b) List the important parts of steam engine. 2
- c) Draw a neat sketch of four-stroke diesel engine and label its important parts. 6
- IV. a) What is a pump ? How are they classified ? 3
- b) Draw a neat sketch of Pelton wheel and explain briefly. 5
- c) Mention any three differences between reciprocating pump and centrifugal pump. 2

**SECTION – B**

*Instruction : Answer any two full questions of the following.*

- V. a) Explain with a neat sketch, core-type transformer. 4  
b) Mention any three applications of transformer. 3  
c) What do you mean by a conductor ? Give two examples. 3
- VI. a) State Fleming's right hand rule. 2  
b) How are the dc generators classified ? 3  
c) Draw a neat diagram of incandescent lamp and explain briefly. 5
- VII. a) Name the different systems of wiring used for domestic purposes. 4  
b) Explain the construction and operation of a modern electric cooking range. 4  
c) Mention the uses of the following measuring instruments : 2  
i) Galvanometer  
ii) Voltmeter  
iii) Energymeter  
iv) Ammeter.
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