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No.

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Serial No. of
Q. C. A. B.

ಒಟ್ಟು ಪ್ರಶ್ನೆಗಳ ಸಂಖ್ಯೆ : 7]
Total No. of Questions : 7]

[ಒಟ್ಟು ಮುದ್ರಿತ ಪುಟಗಳ ಸಂಖ್ಯೆ : 16
[Total No. of Printed Pages : 16

ಸಂಕೇತ ಸಂಖ್ಯೆ : 71

ವಿಷಯ : ಎಲಿಮೆಂಟ್ಸ್ ಆಫ್ ಇಂಜಿನಿಯರಿಂಗ್

Code No. : 71

Subject : **ELEMENTS OF ENGINEERING**

ದಿನಾಂಕ : 03. 04. 2012]

[Date : 03. 04. 2012

ಸಮಯ : ಬೆಳಿಗ್ಗೆ 10-30 ರಿಂದ ಮಧ್ಯಾಹ್ನ-1-15 ರವರೆಗೆ]

[Time : 10-30 A.M. to 1-15 P.M.

ಪರಮಾವಧಿ ಅಂಕಗಳು : 50]

[Max. Marks : 50

FOR OFFICE USE ONLY

Q. No.	Marks	Q. No.	Marks	Q. No.	Marks	Q. No.	Marks	Q. No.	Marks
1.		×		×		×		×	
2.		×		×		×		×	
3.		×		×		×		×	
4.		×		×		×		×	
5.		×		×		×		×	
6.		×		×		×		×	
7.		×		×		×		×	
×		×		×		×		×	
×		×		×		×		×	
×		×		×		×		×	
×		×		×		×		×	
×		×		×		×		×	
×		×		×		×		×	
Total Marks									
Total Marks in words						Grand Total			
1. ✓									
2. ✓						✓			✓
Signature of Evaluators			Registration No.			Signature of the Deputy Chief			Signature of the Room Invigilator

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General Instructions :

- i) The Question-cum-Answer Booklet consists of objective and subjective types of questions having 7 questions.
- ii) Space has been provided against each objective type question. You have to choose the correct choice and write the complete answer in the space provided.
- iii) For subjective type questions enough space for each question has been provided. You have to answer the questions in the space.
- iv) Follow the instructions given against both the objective and subjective types of questions.
- v) Candidate should not write the answer with pencil. Answers written in pencil will not be evaluated. (Except Graphs, Diagrams & Maps)
- vi) In case of Multiple Choice, Fill in the blanks and Matching questions, scratching / rewriting / marking is not permitted, thereby rendering to disqualification for evaluation.
- vii) For reading the questions 15 minutes of extra time has been provided.

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

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 :

$10 \times 1 = 10$

- a) A transformer in which $N_1 > N_2$ is called a

(*step-up transformer, step-down transformer, one-to-one transformer*)

Ans : _____

- b) Armature of a *dc* machine is made of

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

Ans : _____

c) An alternator is a/an

(*dc generator, ac generator, ac motor*)

Ans : _____

d) Electric motor converts electrical energy into

(*mechanical energy, chemical energy, physical energy*)

Ans : _____

e) The wiring which is used for temporary purpose is

(*conduit, CTS, cleat*)

Ans : _____

f) is used to remove the sediments collected at the bottom of boiler drum.

(*Blow-off valve, Junction valve, Feed check valve*)

Ans : _____

g) Fuel pump is used in engines.

(*petrol, gas, diesel*)

Ans : _____

h) Rotary motion is converted into linear motion by type of gearing.

(*spur gear, rack and pinion, worm and worm wheel*)

Ans : _____

i) pump is used for irrigation purpose.

(*Centrifugal, Reciprocating, Gear*)

Ans : _____

j) turbine is used in hydraulic power station to obtain electricity.

(*Steam, Water, Gas*)

Ans : _____

2. a) Name the different types of *dc* motor and draw a circuit diagram of any one of them.

b) List any four applications of transformer.

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c) What are a stator and a rotor of an induction motor ?

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3. a) Explain the principle of a *dc* generator. 3

b) Name the various systems of electrical wiring. 5

c) What is an alternator ? 2

4. a) Explain arc lamp with a neat sketch.

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b) With a neat sketch explain briefly the construction of electric heater. 5

SECTION - B

Instruction : Answer any two full questions of the following.

5. a) Define boiler. 2

- b) State whether the following statements are *true* or *false* : 2

i) Fusible plug is used to keep the level of water in a boiler constant.

ii) Cochran boiler is a vertical type water-tube boiler.

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c) Sketch and describe the simple vertical boiler.

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6. a) Define a water turbine. 2

b) State the advantages of a centrifugal pump over reciprocating pump. 2

c) Describe with a line diagram the working of a centrifugal pump.

6

7. a) What is the function of jockey pulley in belt drive method of power transmission ? 2

b) Differentiate between petrol engine and diesel engine. 2

c) Explain with neat line diagram the working of four-stroke diesel engine. 6

