A

Sl. No. : H

ಒಟ್ಟು ಪ್ರಶ್ನೆಗಳ ಸಂಖ್ಯೆ : 10] [ಒಟ್ಟು ಮುದ್ರಿತ ಪುಟಗಳ ಸಂಖ್ಯೆ : 4

Total No. of Questions : 10] [Total No. of Printed Pages : 4

ಸಂಕೇತ ಸಂಖ್ಯೆ : 71

CCE RR
REVISED

Code No. : 71

ಮುದ್ರಿತ ಪುಟಗಳ ಸಂಖ್ಯೆ

ವಿಷಯ : ಎಲಿಮೆಂಟ್ಸ್ ಆಫ್ ಮೆಕ್ಯಾನಿಕಲ್ ಅಂಡ್ ಎಲೆಕ್ಟ್ರಿಕಲ್ ಇಂಜಿನಿಯರಿಂಗ್ - 2

Subject : ELEMENTS OF MECHANICAL AND ELECTRICAL ENGINEERING-2

(ಹೊಸ ಪಠ್ಯಕ್ರಮ / New Syllabus)

(ಪುನರಾವರ್ತಿತ ಶಾಲಾ ಅಭ್ಯರ್ಥಿ/ Regular Repeater)

ದಿನಾಂಕ : 22. 06. 2019] [Date : 22. 06. 2019

ಸಮಯ : ಬೆಳಿಗ್ಗೆ 9-30 ರಿಂದ ಮಧ್ಯಾಹ–12-45 ರವರೆಗೆ] [Time : 9-30 A.M. to 12-45 P.M.

ಪರಮಾವಧಿ ಅಂಕಗಳು : 100] [Max. Marks : 100

General Instructions to the Candidate :

1. This Question Paper consists of 10 subjective types of questions.
2. This question paper has been sealed by reverse jacket. You have to cut on the right side to open the paper at the time of commencement of the examination. Check whether all the pages of the question paper are intact.
3. Follow the instructions given against both the objective and subjective types of questions.
4. Figures in the right hand margin indicate maximum marks.
5. The maximum time to answer the paper is given at the top of the question paper. It includes 15 minutes for reading the question paper.

TEAR HERE TO OPEN THE QUESTION PAPER
ಪ್ರಶ್ನೆ–ಪತ್ರಿಕೆಯನ್ನು ತೆರೆಯಲು ಇಲ್ಲಿ ಕತ್ತರಿಸಿ

Tear here

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

SECTION – A

Note : Answer *all* the questions.

1. a) Explain the functions of piston in an I.C. engine. 2
   b) List the main applications of I.C. engines. 3
   c) Draw a neat sketch of four stroke diesel engine and explain briefly. 5
2. a) Name the two types of air compressor. 2
   b) Explain the applications of air compressor. 3
   c) Draw a neat sketch of single stage reciprocating air compressor and label the parts. 5
3. a) Mention the applications of air conditioning. 2
   b) Explain the following properties of good refrigerant : 3
      i) Stability
      ii) Non-flammability
      iii) Safety.
   c) Draw a neat sketch of winter air conditioning system and label the parts. 5
4. a) List out the work holding devices on a lathe. 2
   b) What are the operations which are performed on the lathe by holding the job in between the centres by chuck ? 3
   c) Calculate the half taper angle for taper turning by tailstock offset method when larger diameter is 30 mm and smaller diameter is 25 mm and length of taper is 50 mm. 5

   OR

   a) Name the differential types of milling cutters. 2
   b) What do you understand by up-milling and down-milling ? Explain. 3
   c) A 25 mm thick M.S. plate is to be drilled 25 mm drill with a cutting speed 25 m/min during the operation. How much spindle speed is to be adopted ? 5
5. a) What is brazing ? 2
   b) Explain the advantages of soldering. 3
   c) Draw a neat sketch showing all the equipment of metal arc welding. 5

SECTION – B

Note : Answer *all* the questions.

6. a) Define statically induced *emf.* 2
   b) Explain Fleming's right hand rule. 3
   c) Draw a neat sketch of self induced *emf* and explain it briefly. 5
7. a) Define form factor. 2
   b) Describe power and power factor of an *a.c.* circuit. 3
   c) Draw a neat diagram of sinusoidal waveform and mark the following : 5
      i) negative
      ii) amplitude
      iii) positive.
8. a) What is transformer ? 2
   b) Explain the working principle of *d.c.* motor. 3
   c) How does the step-up transformer differ from step-down transformer ? 5

OR

   a) What is *d.c.* generator ? 2
   b) Explain squirrel cage induction motor. 3
   c) How does the *d.c.* series generator differ from *d.c.* shunt generator ? 5
9. a) Explain thermostat. 2
   b) Mention the parts of electric stove. 3
   c) Draw a neat sketch of *a.c.* ceiling fan and label the parts. 5
10. a) Explain the heating element of electric iron. 2
    b) Differentiate between diode and transistor. 3
    c) Draw a neat sketch of reverse bias of a *P-N* junction diode and explain it briefly. 5