

ಒಟ್ಟು ಮುದ್ರಿತ ಪುಟಗಳ ಸಂಖ್ಯೆ : 4 ]  
Total No. of Printed Pages : 4 ]  
ಒಟ್ಟು ಪ್ರಶ್ನೆಗಳ ಸಂಖ್ಯೆ : 10 ]  
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ಸಂಕೇತ ಸಂಖ್ಯೆ : **71**  
**Code No. : 71**

**A**

**CCE RR  
REVISED**

Question Paper Serial No. **30**

ಇಲ್ಲಿಂದ ಕತ್ತರಿಸಿ

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 : 26. 09. 2020 ]

[ Date : 26. 09. 2020

ಸಮಯ : ಬೆಳಿಗ್ಗೆ 10-30 ರಿಂದ ಮಧ್ಯಾಹ್ನ-1-45 ರವರೆಗೆ ] [ Time : 10-30 A.M. to 1-45 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.

**30**

**RR (A)-1121 ★**

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TEAR HERE TO OPEN THE QUESTION PAPER

ಪ್ರಶ್ನೆಪತ್ರಿಕೆಯನ್ನು 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 crank and crank shaft of internal combustion engine. 2  
b) Classify the internal combustion engines. 3  
c) Draw neat sketches of suction stroke and compression stroke of four stroke diesel engine and label the parts. 5
2. a) Name the different types of air compressor. 2  
b) Explain the working principle of single stage reciprocating air compressor. 3  
c) Draw a neat sketch of reciprocating air compressor and label the parts. 5
3. a) Explain the following properties of a good refrigerant : 2  
i) Viscosity  
ii) Corrosiveness.  
b) Explain air cleaning in air conditioning. 3  
c) Draw a neat sketch of vapour absorption refrigerator and label the parts. 5
4. a) Mention the types of lathes. 2  
b) With a sketch explain thread cutting on a lathe. 3  
c) Find out the angle of taper for taper turning by swivelling the compound tool rest, when the large diameter is 50 mm, and small diameter is 40 mm, and length of tapered part is 60 mm. 5

OR

- a) Name the types of drilling machine. 2  
b) Explain end milling processes. 3  
c) Differentiate between horizontal milling machine and vertical milling machine. 5
5. a) Mention the types of welding. 2  
b) Explain the principle of welding. 3  
c) Draw a neat sketch of oxy-acetylene welding equipment and label the parts. 5

**SECTION – B**

*Note : Answer all the questions.*

6. a) What is mutually induced *emf*? 2  
b) In Fleming's left hand rule what do the following fingers indicate? 3  
i) Thumb  
ii) Forefinger  
iii) Middle finger.  
c) Draw a neat diagram of Electromagnetic induction and label the parts & explain. 5
7. a) Define form factor. 2  
b) Define frequency and mention its S.I. unit and also write the standard supply frequency in India. 3  
c) Draw a neat diagram of sine wave containing two full cycles and mark amplitude on each positive half cycle and each negative half cycle. 5
8. a) List any two types of D.C. motors. 2  
b) On what principle do D.C. motor and D.C. Generator work? 3  
c) List the applications of transformer, D.C. series motor, D.C. series generator and Squirrel cage induction motor. 5

OR

- a) List any two types of transformer. 2  
b) Compare step-up transformer with step-down transformer. 3  
c) Explain the working of squirrel cage induction motor. 5
9. a) On what principle does electric bell work? 2  
b) Explain construction and use of thermostat. 3  
c) Draw a neat sketch of electric stove and explain its construction. 5
10. a) List two types of bias. 2  
b) List any two types of semiconductors and explain the construction of any one. 3  
c) Draw neat symbols of *P-N* junction diode, *N-P-N* transistor, *P-N-P* transistor and write their uses. 5

