

CCE RF/RR (A)/666/042

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ಮಾರ್ಚ್/ಏಪ್ರಿಲ್ 2024 ರ ಪರೀಕ್ಷೆ - 1
MARCH/APRIL 2024 EXAMINATION-1

ಒಟ್ಟು ಮುದ್ರಿತ ಪುಟಗಳ ಸಂಖ್ಯೆ : 8]

Total No. of Printed Pages : 8]

ಒಟ್ಟು ಪ್ರಶ್ನೆಗಳ ಸಂಖ್ಯೆ : 8]

Total No. of Questions : 8]

**CCE RF/RR
FULL SYLLABUS**

Question Paper Serial No.

ಸಂಕೇತ ಸಂಖ್ಯೆ : **52**

Code No. : **52**

ವಿಷಯ : ಎಲಿಮೆಂಟ್ಸ್ ಆಫ್ ಮೆಕ್ಯಾನಿಕಲ್ ಇಂಜಿನಿಯರಿಂಗ್ - IV

Subject : **ELEMENTS OF MECHANICAL ENGINEERING - IV**

(ಶಾಲಾ ಅಭ್ಯರ್ಥಿ / ಶಾಲಾ ಪುನರಾವರ್ತಿತ ಅಭ್ಯರ್ಥಿ)

(Regular Fresh / Regular Repeater)

ದಿನಾಂಕ : 03. 04. 2024]

[Date : 03. 04. 2024

ಸಮಯ : ಬೆಳಿಗ್ಗೆ 10-15 ರಿಂದ ಮಧ್ಯಾಹ್ನ 1-30 ರವರೆಗೆ] [Time : 10-15 A.M. to 1-30 P.M.

ಗರಿಷ್ಠ ಅಂಕಗಳು : 80]

[Max. Marks : 80

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General Instructions to the Candidate :

1. This question paper consists of 8 questions in all.
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 (**Follow the arrow**). **Do not cut the left side to open the paper.** Check whether all the pages of the question paper are intact.
3. Follow the instructions given against the questions.
4. Figures in the right hand margin indicate maximum marks for the questions.
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.
6. Ensure that the Version of the question paper distributed to you and the Version printed on your admission ticket is the same.

1 of 8

ಇಲ್ಲಿಂದ ಕತ್ತರಿಸಿ

TEAR HERE TO OPEN THE QUESTION PAPER

03. 04. 2024

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Note : i) Answer *all* the questions.

ii) Drawing should be drawn in drawing sheet only.

iii) All dimensions are in mm.



1. **Four alternatives are given for each of the following questions / incomplete statements. Select the most appropriate alternative and write it in the answer book along with its alphabet :**

10 × 1 = 10

i) Compression ratio in petrol engine when compared to diesel

engine is



(A) Less

(B) More

(C) Very high

(D) All of these

ii) Spark plug is used in

(A) Diesel engine

(B) Oil engine

(C) Petrol engine

(D) Electric engine

iii) Air filter is used in



(A) Petrol engine

(B) Diesel engine

(C) Electric engine

(D) Steam engine

iv) The type of drilling machine used to drill a hole up to

12 mm diameter is



- (A) Pillar drilling machine
- (B) Upright drilling machine
- (C) Radial drilling machine
- (D) Sensitive drilling machine

v) Process of enlarging the hole size is known as

- (A) Drilling
- (B) Reaming
- (C) Boring
- (D) Spot facing



vi) In orthographic projections, the *XY* line is known as

- (A) Reference line
- (B) Horizontal line
- (C) Horizontal trace
- (D) Vertical line

vii) Which of the following positions is not possible for a plane ?

- (A) Perpendicular to both V.P. and H.P.
- (B) Parallel to both V.P. and H.P.
- (C) Perpendicular to H.P., parallel to V.P.
- (D) Perpendicular to V.P., parallel to H.P.



viii) The top view of a circular disc inclined to H.P. and parallel

to V.P. is



- (A) A circle (B) An ellipse
(C) A point (D) A line

ix) A solid has






- (A) Two dimensions (B) Three dimensions
(C) One dimension (D) Four dimensions

x) The hidden part in a drawing is shown as

- (A) Continuous thin line (B) Long dark line
(C) Continuous thick line (D) Dashed line



2. a) Mention any two advantages of four-stroke engine. 2
b) Explain the working of a two-stroke petrol engine. 3
c) Write the comparison between external combustion and internal combustion engines. Give examples. 5

3. a) Mention the uses of internal combustion engines. 2
- b) Name the types of I.C. engine on the following bases : 3
- i) Types of fuel used 
- ii) Position of engine cylinder
- iii) Number of strokes
- c) Draw a neat sketch of I.C. engine and label the parts. 5
4. a) List the different operations on drilling machine. 2
- b) Explain thread cutting operation carried out on lathe. 3
- c) With a neat sketch, explain countersinking operation carried out on drilling machine.  5
5. a) Write short notes on the following : 5
- i) Lathe bed
- ii) Lathe tail stock 
- b) A square lamina $ABCD$ of 30 mm side rests on the corner C such that the diagonal AC is inclined at 45° to H.P. Draw its top and front views. 5
6. a) A hexagonal lamina of 30 mm sides rests on H.P. with one of its sides. The surface of the lamina is inclined at 45° to H.P. Draw its top and front views. 5

- b) Draw the top and front views of a cube of 30 mm sides resting with one of its square faces lying on H.P. and one of the vertical square surfaces. Other parallel or perpendicular to V.P.



5

7. Draw the top and front views of a right circular cylinder of base 30 mm diameter and axis 50 mm long resting on H.P. such that axis is inclined to H.P. at 30° and parallel to V.P. 10
8. The pictorial view of an object is shown in Figure No. 1. Draw the following orthographic views and mark the dimensions : 10

- i) Front view — Looking in the direction of arrow 'X'
- ii) Top view — Looking in the direction of arrow 'Y'
- iii) Side view — Looking in the direction of arrow 'Z'.

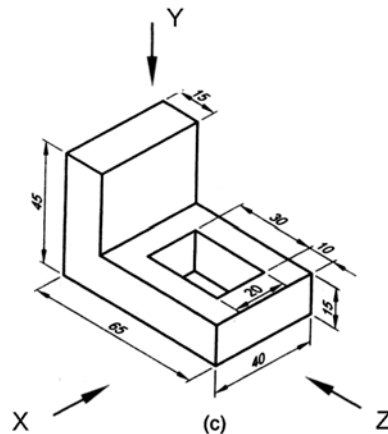


Figure No. 1

OR

The orthographic views of an object are shown in Figure No. 2.

Draw the isometric projection of the object.

10

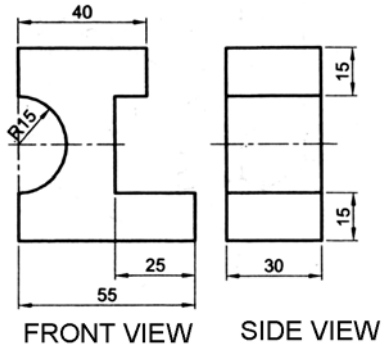
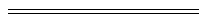


Figure No. 2



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