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● RF(A)/100/3323

A

Question Paper Serial No. **100**

ಒಟ್ಟು ಮುದ್ರಿತ ಪುಟಗಳ ಸಂಖ್ಯೆ : 8]

Total No. of Printed Pages : 8]

ಒಟ್ಟು ಪ್ರಶ್ನೆಗಳ ಸಂಖ್ಯೆ : 8]

Total No. of Questions : 8]

**CCE RF
NEW SYLLABUS**

ಸಂಕೇತ ಸಂಖ್ಯೆ : **52**

Code No. : 52

ವಿಷಯ : ಎಲಿಮೆಂಟ್ಸ್ ಆಫ್ ಮೆಕ್ಯಾನಿಕಲ್ ಇಂಜಿನಿಯರಿಂಗ್ - IV

Subject : ELEMENTS OF MECHANICAL ENGINEERING - IV

(ಶಾಲಾ ಅಭ್ಯರ್ಥಿ / Regular Fresh)

ದಿನಾಂಕ : 08. 04. 2023]

[Date : 08. 04. 2023

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

ಪರಮಾವಧಿ ಅಂಕಗಳು : 80]

[Max. Marks : 80

General Instructions to the Candidate :

1. This Question Paper consists of objective and subjective types of 8 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.

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ಇಲ್ಲಿಂದ ಕತ್ತರಿಸಿ

TEAR HERE TO OPEN THE QUESTION PAPER

ಪ್ರಶ್ನೆ-ಪತ್ರಿಕೆಯನ್ನು ತೆರೆಯಲು ಇಲ್ಲಿ ಕತ್ತರಿಸಿ

Tear here

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) The backbone of an I.C. Engine is

- (A) Piston (B) Cam shaft
(C) Crankshaft (D) Valve.

ii) Sump for the lubricating oil in the I.C. Engine is

- (A) Fly wheel (B) Crank case
(C) Valve (D) Piston rings.

iii) Which type of engines are used in the buses ?

- (A) Petrol engine (B) Diesel engine
(C) Gas engine (D) Biogas engine.

- iv) The mother of machine tools is
- (A) Drilling machine (B) Grinding machine
- (C) Milling machine (D) Lathe.
- v) The type of drilling machine used to drill a hole up to 12 mm diameter is
- (A) Sensitive drilling machine
- (B) Radial drilling machine
- (C) Gang drilling machine
- (D) Vertical drilling machine.
- vi) The projection on H.P. is
- (A) Front view (B) Top view
- (C) Side view (D) Right side view.
- vii) The dimension lines are
- (A) Thin line (B) Thick line
- (C) Dash line (D) Zigzag line.

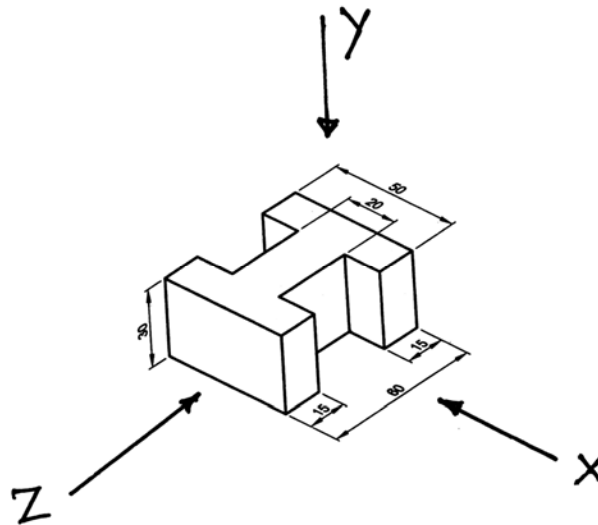
[Turn over

- viii) In a regular pentagon the exterior angle is
- (A) 70° (B) 72°
(C) 75° (D) 108° .
- ix) A plane surface has
- (A) three dimensions (B) four dimensions
(C) two dimensions (D) zero dimension.
- x) A square lamina is perpendicular to V.P. and parallel to H.P. Its top view will appear as
- (A) Hexagon (B) Pentagon
(C) Triangle (D) Square.
2. a) List the types of piston rings. 2
- b) Mention the main parts of I.C. engine. 3
- c) Write the difference between four-stroke and two-stroke petrol engines. 5

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3.	a)	Classify the I.C. engine based on method of cooling.		2
	b)	Explain plain turning operation carried out in the lathe.		3
	c)	With a neat sketch explain the working principle of four-stroke diesel engine and label the parts.		5
4.	a)	Define drilling.		2
	b)	Explain the working principle of Lathe.		3
	c)	Explain the following lathe operations :		5
	i)	Facing		
	ii)	Taper turning.		
5.	a)	With a neat sketch explain the following drilling machine operations :		5
	i)	Counter sinking		
	ii)	Spot facing.		
	b)	A hexagonal pyramid of base side 30 mm and axis 60 mm has an edge of its base on the ground. Draw its projections.		5
6.		A pentagonal plane lamina of 30 mm side rests on HP with its plane vertical and inclined at 45° to VP. Draw its top and front views when one of its sides is perpendicular to H.P.		10

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7. A pentagonal prism is resting on one of its corners of base on the H.P. The longer edge containing that corner is inclined at 45° to the H.P. Draw the projections of the solid. 10
8. The pictorial view of an object is shown in Figure No. 1. Draw the following orthographic views and mark the dimensions : 10
- Front view — Looking in the direction of arrow 'X'
 - Top view — Looking in the direction of arrow 'Y'
 - Side view — Looking in the direction of arrow 'Z'.



All dimensions in mm

Figure No. 1

OR

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

Draw the isometric projection of the object.

10

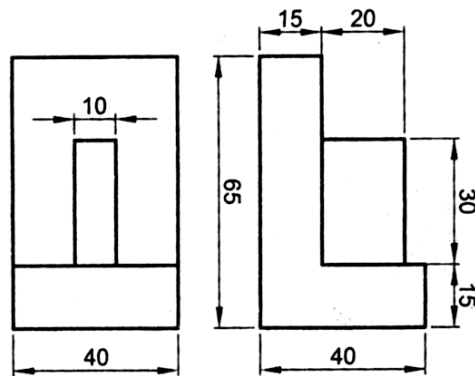
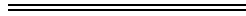


Figure No. 2



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