Total No. of printed pages = 8

END SEMESTER (REGULAR / RETEST) EXAMINATION, DECEMBER – 2023

Semester : 1st (New)

Subject Code : Me-101

ENGINEERING DRAWING

Full Marks – 100

Time – Four hours

The figures in the margin indicate full marks for the questions.

Instructions :

(i) Question Nos. 1 and 2 are compulsory.

(ii) Answer any *five* questions from the rest.

1. Choose the correct answers from the following : 1×10=10

(a) Which of the following is softest pencil ?

(i) 2B (ii) 1B

(iii) HB (iv) H

(b) The one interior angle of regular pentagon is

(i) 100° (ii) 108°

(iii) 115° (iv) 110°

[Turn over

(c) What does the "Single-Stroke" lettering mean ?

(i) Cursive writing

(ii) Uniformity in letters as obtained in one stroke of the pencil

(iii) Writing in one stroke without lifting the pencil

(iv) Writing only with hard, small diameter lead-pencil

(d) Drawings of small objects are drawn using _____ scale is always used.

(i) Enlarging scale (ii) Full size scale

(iii) Vernier scale (iv) Reducing scale

(e) A point 'P' is below Horizontal Plane (HP) and behind Vertical Plane (VP). The point is in

(i) First quadrant (ii) Second quadrant

(iii) Third quadrant (iv) Fourth quadrant

(f) When a line is inclined to VP and parallel to HP, the front view will be _____ to xy.

(i) Parallel (ii) Perpendicular

(iii) Inclined at angle φ (iv) None of these

(g) In a third angle projection method, left hand side view of an object is drawn _____ front view.

(i) left side of (ii) right side of

(iii) rear side of (iv) None of these

(h) In isometric projection the three edges of an object are inclined to each other at

(i) 60° (ii) 120°

(iii) 100° (iv) 90°

(i) Distance between adjacent rows in a double riveted lap joint (chain type) is kept as

(i) 2d+6 (ii) 3d

(iii) 1.5d (iv) 3d+6

(j) The crest diameter of a screw thread is the

(i) Minor diameter (ii) Major diameter

(iii) Core diameter (iv) None of these.

2. Fill in the blanks with appropriate words : 1×5=5

(a) All dimensions are shown from a common base line in _____ dimensioning.

(b) To draw or measure angles _____ is used.

(c) Lettering is usually done in _____ letters.

(d) To measure three units _____ scale is used.

(e) When a point lies on the reference line, its two views lie on _____.

3. (a) Draw a simple drawing of your own and show on it the following as per I.S. 696 giving weightage in thickness, shade of lines and arrow heads : 1×5=5

(i) Outer line (ii) Centre line

(iii) Dimension line (iv) Section line

(v) Extension line.

(b) Explain with the help of sketches 1×5=5

(i) Unidirectional system

(ii) Aligned system

(iii) Chain dimensioning

(iv) Parallel dimensioning

(v) Combined dimensioning.

(c) Write the following in single stroke vertical style. Height of the letters should be 18 mm. Attention should be given to thickness, shape of letters, spacing and general arrangement. 7

GROW MOREFOOD

4. (a) Draw a line 90 mm long and quadrisect it. 4

(b) Construct a regular hexagon, given the length of its side as 30 mm with the help of compass. 4

(c) Construct a 60° angle with the help of a compass. 4

(d) The perimeter of a triangle is 165 mm. Draw a triangle when the proportions of the sides are 4 : 5 : 6. 5

5. (a) To construct a plain scale to show kilometres and hectometres when 2.5 centimetres are equal to 1 kilometre and long enough to measure up to 6 kilometres. Find R.F. and indicate a distance 4 kilometers and 5 hectometres on the scale. 7

(b) The distance between two stations A and B is 100 kilometers and its equivalent distance on railway map measures 2.5 centimetres. What is R.F.? Draw a diagonal scale showing single kilometres and indicate a distance of 455 kilometres on the scale. 10

6. (a) A point A is 35 mm above HP and 25 mm in front of VP. Another point B is 20 mm above HP and 15 mm in front of VP. The distance between their projectors is 40 mm. Draw the projections of the points A and B and find the distance between them. 8

(b) A Straight line AB, 55 mm long makes an angle of 30° to the HP and 45° to the VP. The end A is 12 mm in front of the VP and 15 mm above the HP. Draw the projections of the line AB. 9

7. Fig.-1 shows an isometric view of a shaft support. Draw the following views : 9+5+3=17

(a) Sectional front view from the front (b) Top view and (c) Side view from the left.

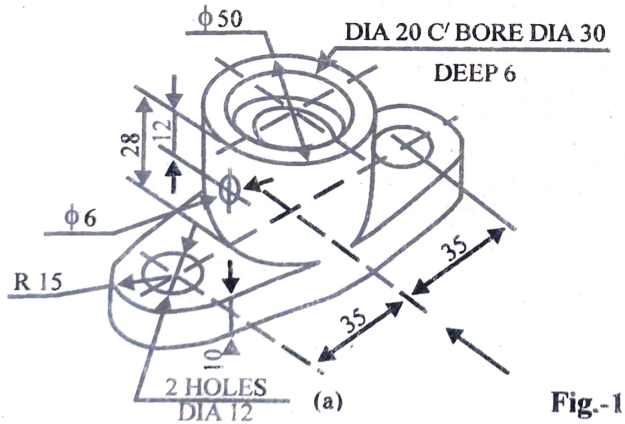


Fig.-1

8. (a) Draw the isometric projection of the three bricks of size 200 mm × 200 mm × 100 mm from the given top and front views as shown in Fig.-2. 7

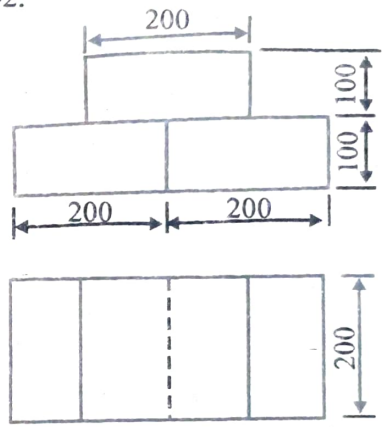


Fig.-2

(b) Draw sectional front view and top view of a double riveted lap joint using rivets in chain arrangement. Thickness of plates = 12 mm. Show all necessary dimensions on your sketch. 6+4=10

9. (a) Draw a screw thread profile and show the following : 1×6=6

(i) Crest (ii) Root

(iii) Pitch (iv) Lead

(v) Major dia (vi) Minor dia.

(b) Draw two views of a Square headed bolt with hexagonal nut and washer taking diameter of the bolt equal to 24 mm. 6+5=11