Total No. of Questions: 6 *Total No. of Printed Pages:3*

Enrollment No.....

Faculty of Engineering

End Sem (Even) Examination May-2019

EN3ES02 Engineering Graphics

Programme: B.Tech. Branch/Specialisation: All

Duration: 3 Hrs. **Maximum Marks: 60**

Note: All questions are compulsory. Internal choices, if any, are indicated. Answers of Q.1 (MCQs) should be written in full instead of only a, b, c or d.

Q.1 i. Representative fraction (RF) for enlarging scale is **1**
(a) Greater than 1 (b) Equal to 1
(c) Less than 1 (d) Can't be define

ii. When a right circular cone is cut by a plane parallel to its base, the curve obtained is **1**
(a) Ellipse (b) Parabola (c) Hyperbola (d) Circle

iii. The top view of an object is drawn on **1**
(a) Vertical plane (b) Horizontal plane
(c) Profile plane (d) Any of these

iv. In orthographic projection, the projection of lines are _____ to the projection plane. **1**
(a) Parallel (b) Inclined (c) Orthogonal (d) Any of these

v. The internal angle of regular pentagon is ___ degree. **1**
(a) 72 (b) 108 (c) 120 (d) 150

vi. The following is the method for development of a right regular prism. **1**
(a) Parallel line method (b) Radial line method
(c) Triangulation method (d) Approximate method

vii. A sphere in isometric projection appears as **1**
(a) Circle (b) Ellipse
(c) Both (a) and (b) possible (d) Can't be define

viii. The isometric length is ____ percent of actual length. **1**
(a) 61.5 (b) 71.5 (c) 81.5 (d) 91.5

ix. What does the acronym, WCS stand for? **1**
(a) Western CAD System
(b) World Coordinate System
(c) Worldwide Coordinate Sectors
(d) Wrong CAD Settings

P.T.O.

x. The extension for Autocad drawing files is **1**
(a) .dwt (b) .dwg (c) .jpg (d) .doc

Q.2 i. Draw a scale 1 cm = 1m to read decimeters, to measure maximum distance of 6 m. Show on it a distance of 4 m and 6 dm. **4**

ii. Draw an isosceles triangle of 100 mm long base and 110 mm long altitude. Inscribe a parabola in it by method of tangents. **6**

OR iii. Draw locus of a point on the periphery of a circle which rolls on a curved path. Take diameter of rolling circle 50 mm and radius of directing circle 75 mm. **6**

Q.3 i. A line AB 45 mm long is in H.P. and inclined to V.P. The end A is 10 mm in front of V.P. The length of the front view is 30 mm. Draw the projections of the line. Determine its inclination with V.P. **4**

ii. FV of line AB makes 45^0 angle with XY line and measures 60 mm. TV of line makes 30^0 with XY line. End A is 15 mm above HP and its VT is 10 mm below HP. Draw projections of line AB, determine inclinations with HP & VP and locate HT, VT. **6**

OR iii. Draw the FV & TV of the part shown in fig.1 **6**

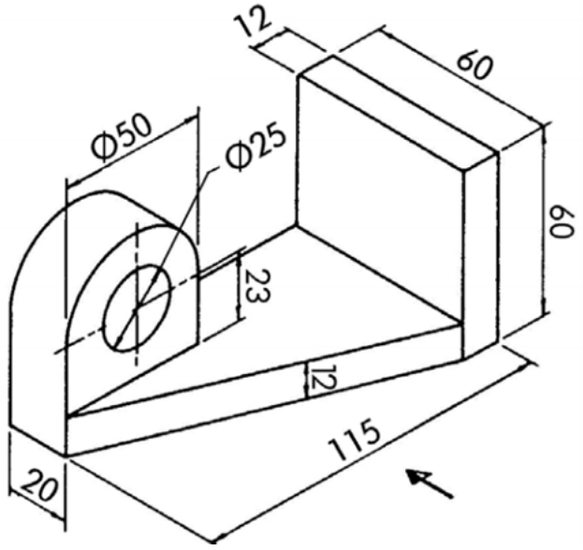

Figure 1

Q.4 i. A 30^0 – 60^0 set square of longest side 100 mm long is in VP & perpendicular to HP. Draw the projections when its surface is 45^0 inclined to VP. **4**

ii. A hexagonal prism, having a base with a 30 mm side and an 80 mm long axis, rests on one of its base edges in the H.P such that the axis is inclined at 30^0 to the HP and 45^0 to the VP. Draw its projections. **6**

OR iii. A cone, 50 mm base diameter and 70 mm axis is standing on its base on HP. It cut by a section plane 45^0 inclined to HP through base end of end generator. Draw projections, sectional views, true shape of section and development of surfaces of remaining solid. **6**

Q.5 i. Using freehand sketch draw the pentagon by common method of drawing a polygon. **4**

ii. What do you mean by isometric drawing & isometric view? Draw the isometric projection of a sphere of radius 50 mm. **6**

OR iii. Draw the isometric projection of a pentagonal prism side of base 50 mm height 60 mm surmounted by a cone with base diameter 40 mm and height is 60 mm is placed axially on the top of the prism. **6**

Q.6 i. What is CAD? Give names of any 4 CAD software. **4**

ii. Explain the various methods of drawing polygon & circle in AutoCAD. **6**

OR iii. Explain any six EDIT commands used in CAD. **6**

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Marking Scheme
EN3ES02 Engineering Graphics

Q.1 i. Representative fraction (RF) for enlarging scale is **1**
(a) Greater than 1

ii. When a right circular cone is cut by a plane parallel to its base, the curve obtained is **1**
(d) Circle

iii. The top view of an object is drawn on **1**
(b) Horizontal plane

iv. In orthographic projection, the projection of lines are _____ to the projection plane. **1**
(a) Parallel

v. The internal angle of regular pentagon is ___ degree. **1**
(b) 108

vi. The following is the method for development of a right regular prism. **1**
(a) Parallel line method

vii. A sphere in isometric projection appears as **1**
(a) Circle

viii. The isometric length is ____ percent of actual length. **1**
(c) 81.5

ix. What does the acronym, WCS stand for? **1**
(b) World Coordinate System

x. The extension for Autocad drawing files is **1**
(b) .dwg

Q.2 i. Draw a scale 1 cm = 1m to read decimeters, **4**
RF calculation 1 mark
Drawing 2 marks
Distance shown 1 mark

ii. Draw an isosceles triangle **6**
Isosceles triangle 1 mark
Tangents 2 marks
Parabola curve 3 marks

OR iii. Draw locus of a point on the periphery of a circle **6**
Rolling & directing circles 2 marks
Construction work 2 marks
Final curve 2 marks

Q.3 i. Determine its inclination with V.P. **4**
FV 1 mark
TV 1 mark
Inclination 1 mark
Dimensioning 1 mark

ii. Determine inclinations with HP & VP and locate HT, VT. **6**
FV 1 mark
TV 1 mark
Inclinations 2 marks
HT & VT 1 mark
Dimensioning 1 mark

OR iii. Draw the FV & TV of the part shown in fig.1 **6**
FV 2 marks
TV 2 marks
Dimensioning 2 marks

Q.4 i. Draw the projections when its surface is 45^0 inclined to VP. **4**
Initial FV & TV 1 mark
Final FV & TV 2 marks
Dimensioning 1 mark

ii. Draw its projections. **6**
Hexagonal prism with axis perpendicular to HP(FV&TV) 2 marks
Hexagonal prism with axis inclined to HP(FV&TV) 2 marks
Hexagonal prism with axis inclined to HP&VP(FV&TV) 2 marks

OR iii. Draw projections, sectional views, true shape of section and development of surfaces of remaining solid. **6**
Projections 1 mark
Sectional Views 1 mark
True Shape 2 marks
Development 2 marks

Q.5 i. Pentagon by common method of drawing a polygon. **4**
Method of construction 3 marks
Pentagon drawing 1 mark

ii. Explanation of isometric drawing & isometric view 2 marks **6**
Isometric scale 1 mark
Isometric projection of a sphere 3 marks

OR iii. Draw the isometric projection of a pentagonal prism side **6**
Isometric projection of a pentagonal prism 3 marks
Isometric projection of a cone 2 marks
Dimensioning 1 mark

Q.6	i.	What is CAD? Give names of any 4 CAD software.		**4**
		CAD definition	2 marks	
		4 CAD s/w names	2 marks	
	ii.	Explain the various methods of drawing polygon & circle in AutoCAD.		**6**
		Methods of drawing polygon	3 marks	
		Methods of drawing circle	3 marks	
OR	iii.	Any six EDIT commands used in CAD		**6**
		EDIT commands 1 mark each	(1 mark * 6)	

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