

Enrollment No.....



Faculty of Engineering / Science

End Sem Examination Dec-2023

EN3ES26 / BC3ES11 Engineering Graphics

Programme: B.Tech. / B.Sc.

Branch/Specialisation: All /  
Computer Science**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. Assume suitable data if necessary. Notations and symbols have their usual meaning.

- Q.1 i. For orthographic projections, B.I.S. recommends the following 1  
projections-
- (a) First-angle projection
  - (b) Second-angle projection
  - (c) Third-angle projection
  - (d) Fourth-angle projection
- ii. Which one of the following position is not possible in projection of a 1  
line?
- (a) Line perpendicular to HP, parallel to VP
  - (b) Line perpendicular to VP, parallel to HP
  - (c) Line parallel to both VP and HP
  - (d) Line perpendicular to both VP and HP
- iii. If both front and top views of a plane are straight lines, the true shape 1  
will lie on-
- (a) Profile plane
  - (b) Horizontal plane
  - (c) Vertical plane
  - (d) Any of these
- iv. Number of faces in a dodecahedron are- 1
- (a) 4
  - (b) 8
  - (c) 12
  - (d) 20
- v. A cone resting on its base on the H.P. is cut by a section plane parallel 1  
to V.P. has its sectional front view.
- (a) Ellipse
  - (b) Parabola
  - (c) Hyperbola
  - (d) Semi-circle
- vi. If the front view of a cone is represented by an equilateral triangle of 60 1  
mm side. The area of its lateral surface is-
- (a)  $30\pi$
  - (b)  $60\pi$
  - (c)  $90\pi$
  - (d)  $120\pi$

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- vii. How will you deselect an object while you are selecting a set of objects? **1**  
 (a) Ctrl+ click on the object to be removed  
 (b) Alt + Click on the object to be removed  
 (c) Shift + Click on the object to be removed  
 (d) None of these
- viii. Status bar do not contain- **1**  
 (a) snap (b) grid  
 (c) erase (d) polar
- ix. One of the below options is wrong about type of Autocad drawing units- **1**  
 (a) Architectural (b) Engineering  
 (c) Decimal (d) Millimeter
- x. Make a circle with a radius of 5 units in AutoCAD, then make a layer and name it Drg and give this layer Red color. Now place the circle on the Drg layer then select the circle and change its color to green from properties palette. What is the final color of the circle now? **1**  
 (a) Red (b) Green  
 (c) Yellow (d) None of these
- Q.2 i. Define elevation, plan and end view. **3**  
 ii. Draw the projections of the following points on a common reference line keeping the distance between their projectors 30 mm apart. **7**  
 (a) Point A is 20 mm below the H.P. and 50 mm in front of the V.P.  
 (b) Point B is in the H.P. and 40 mm behind the V.P.  
 (c) Point C is 30 mm in front of the V.P. and in the H.P.  
 (d) Point D is 50 mm above the H.P. and 30 mm behind the V.P.  
 (e) Point E is 20 mm below the H.P. and 50 mm behind the V.P.  
 (f) Point F is in the V.P. and 50 mm below the H.P.  
 (g) Point G is 30 mm above the H.P. and 50 mm in front of the V.P.
- OR iii. The distance between the end projectors of a line PQ is 50 mm. The end P is 50 mm in front of the V.P. and 25 mm above the H.P. The end Q is 10 mm in front of the V.P. and above the H.P. The line is inclined at 30° to the V.P. Draw the projections of line PQ. Determine its true length and true angle of inclination with the H.P. **7**
- Q.3 i. What are solid of revolution? Explain with two examples. **3**  
 ii. A hexagonal plane of side 30 mm has an edge on the H.P. Its surface is inclined at 45° to the H.P. and the edge on which the plane rests is inclined at 30° to the V.P. Draw its projections. **7**

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- OR iii. A hexagonal pyramid of base edge 30 mm and axis 60 mm, has a triangular face on the ground and the axis parallel to the V.P. Draw its projections. **7**
- Q.4 i. What are the dimensions of the cone, if its development is a semicircle of 120 mm diameter? **3**  
 ii. A pentagonal pyramid of base side 30 mm and axis 60 mm is resting on its base on the H.P. with an edge of the base parallel to the V.P. It is cut by a section plane perpendicular to the V.P., inclined at 60° to the H.P. and bisecting the axis. Draw its front view and sectional top view and true shape of the section. **7**
- OR iii. A cylinder of base diameter 50 mm and axis 70 mm is resting on ground with its axis vertical. It is cut by a section plane perpendicular to the V.P., inclined at 45° to the H.P., passing through the top of a generator and cuts all the other generators. Draw the development of its lateral surface. **7**
- Q.5 i. What is the difference between COPY and MOVE? Also write the difference between Line and Polyline command. **4**  
 ii. Explain the use of chamfer and fillet tools in AutoCAD. Also state the disadvantages of CAD. **6**
- OR iii. Explain the following 2D drawing entities with the help of sketch: Line, Arc, Polyline, Ellipse, Donut, Polygon. **6**
- Q.6 Attempt any two:  
 i. What is the purpose of layers in AutoCAD? How can you create a custom linetype in AutoCAD? **5**  
 ii. How can you create a dimension in AutoCAD? What do you understand by aligned dimension? **5**  
 iii. What are the key features and benefits of AutoCAD's annotation tools? Also explain the role of units commands in setting up the AutoCAD drawing space. **5**

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# Scheme of Marking

## Engineering Graphics (T) - EN3ES26 (T)

Q.1	i)	For orthographic projections, B.I.S. recommends the following projections	1
		(a) First-angle projection	
	ii)	Which one of the following position is not possible in projection of a line?	1
		(d) Line perpendicular to both VP and HP	
	iii)	If both front and top views of a plane are straight lines the true shape will lie on	1
		(a) profile plane	
	iv)	Number of faces in a dodecahedron are	1
		(c) 12	
	v)	A cone resting on its base on the H.P. is cut by a section plane parallel to V.P. has its sectional front view	1
		(c) hyperbola	
	vi)	If the front view of a cone is represented by an equilateral triangle of 60 mm side. The area of its lateral surface is	1
		1 mark will be awarded if question attempted by student.	
	vii)	how will you deselect an object while you are selecting a set of objects?	1
		(c) Shift + Click on the object to be removed	
	viii)	Status bar do not contain	1
		(c) erase	
	ix)	One of the below options is wrong about type of Autocad drawing units which one is it	1
		(d) Millimeter	
	x)	Make a circle with a radius of 5 units in AutoCAD, then make a layer and name it Drg and give this layer Red color. Now place the circle on the Drg layer then select the circle and change its color to green from properties palette. What is the final color of the circle now?	1
		(b) Green	
Q.2	i.	elevation, plan and end view	3
OR	ii.	each point	7

	iii.	point draw	2 marks	7
		FV	1 marks	
		TV	1 marks	
		True length	2 marks	
		Angle	1 marks	
Q.3	i.	What are solid of revolution?	1 marks	3
		Give three example	1 marks	
		and there formation	1 marks	
	ii.	Initial position (I step)	3 marks	7
		Second position (II Step)	2 marks	
		Final position (III step)	2 marks	
OR	iii.	Initial position (I step)	3 marks	7
		Second position (II Step)	3 marks	
		Dimensions	1 marks	
Q.4	i.	Formula	1 marks	3
		Correct answer	2 marks	
	ii.	Initial position (I step)	3 marks	7
		Second position (II Step)	2 marks	
		section (III step)	2 marks	
OR	iii.	FV	3 marks	7
		TV	2 marks	
		development	2 marks	
Q.5	i.	difference between COPY and MOVE	2 marks	4
		difference between Line and Polyline command	2 marks	
	ii.	use of chamfer and fillet	2 marks	6
		disadvantages of CAD	4 marks	
OR	iii.	drawing entities : Line, Arc, Polyline, Ellipse, Donut, Polygon	1 marks each	6
Q.6				
	i.	purpose of layers	3 marks	5
		create a custom linetype	2 marks	
	ii.	create a dimension in AutoCAD	3 marks	5
		understand by aligned dimension	2 marks	
	iii.	features and benefits of AutoCAD's annotation tools	3 marks	5
		units commands in setting up the AutoCAD drawing	2 marks	

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