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- OR iii. What are the important factors to be considered while drafting and designing a product? Explain with suitable example. 7
- Q.5 i. What is the meaning of WCS and UCS? Write steps to calculate area of a rectangle by cad software. 4
- ii. Describe the use of fillet command. How do you change fillet radius? What is the effect of this command with zero radius? 6
- OR iii. What are various constructional facilities available for producing 2D and 3D assembly drawings and views? 6
- Q.6 Write short note on any two:
- i. Comparison of 2D & 3D modelling systems 5
- ii. 3D techniques 5
- iii. Utility of 3D modelling in Engineering industry 5

Total No. of Questions: 6

Total No. of Printed Pages:4

Enrollment No.....



Faculty of Engineering
End Sem (Odd) Examination Dec-2017
ME2CO04 Machine Drawing and CAD

Programme: Diploma

Branch/Specialisation: ME

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. Hatching lines are drawn at ___ degree to reference line:- 1
(a) 30 (b) 45 (c) 60 (d) 90
- ii. This is the term for the range of tightness or looseness resulting from the allowances and tolerances in mating parts: 1
(a) Limit (b) Fit (c) Tolerance (d) Specification
- iii. These are groups of components of a larger machine:- 1
(a) Sub Assemblies (b) External Assemblies
(c) Component Assemblies (d) Major Assemblies
- iv. This type of thread is a thread on the inside of a member: 1
(a) Basic Thread (b) External Thread
(c) Internal Thread (d) Metric Thread.
- v. The default position of the UCS icon is positioned at _____ on the AutoCAD grid 1
(a) 0,0,0 (b) 10,10,10
(c) 100,100,100 (d) 20,20,20
- vi. A cylinder can be created by drawing a rectangular shape then the _____ tool:- 1
(a) Revolve (b) Sweep (c) Extrude (d) None of these
- vii. The MASSPROP shortcut will provide the following information 1
(a) Mass (b) Volume
(c) Bounding Box (d) All of these
- viii. The 3-D commands on the Modelling toolbar include _____ 1
(a) Box (b) Sphere (c) Extrude (d) All of these

P.T.O.

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- ix. CAD programs which incorporate parametric modelling utilize a system in which the dimensions control the _____ **1**
 (a) Size and shape of the model features (b) perspective of the model
 (c) Shading used to render the model (d) all of the above
- x. The Conceptual Visual Style tool is located on the _____ toolbar **1**
 (a) Visual Styles (b) Modify (c) 3D Modelling (d) All the above

- Q.2 i. What is the importance of dimensioning in drawing? **2**
 ii. Show by means of neat sketch conventional representation of External and Internal threads including V threads. **3**
 iii. Explain various types of dimensioning. What are the different terms and notations used for dimensioning? **5**
- OR iv. Draw conventional representation of the following: (i) Slotted heads **5**
 (ii) Splined shaft (iii) Bearing (iv) Spring (v) Gears.

- Q.3 i. What is the difference between a cotter joint and knuckle joint? **2**
 ii. The following figure-1 shows the details of cotter joint. Draw the following views of the joints with the parts assembled in their working position: 1) Front View 2) Top View. **8**

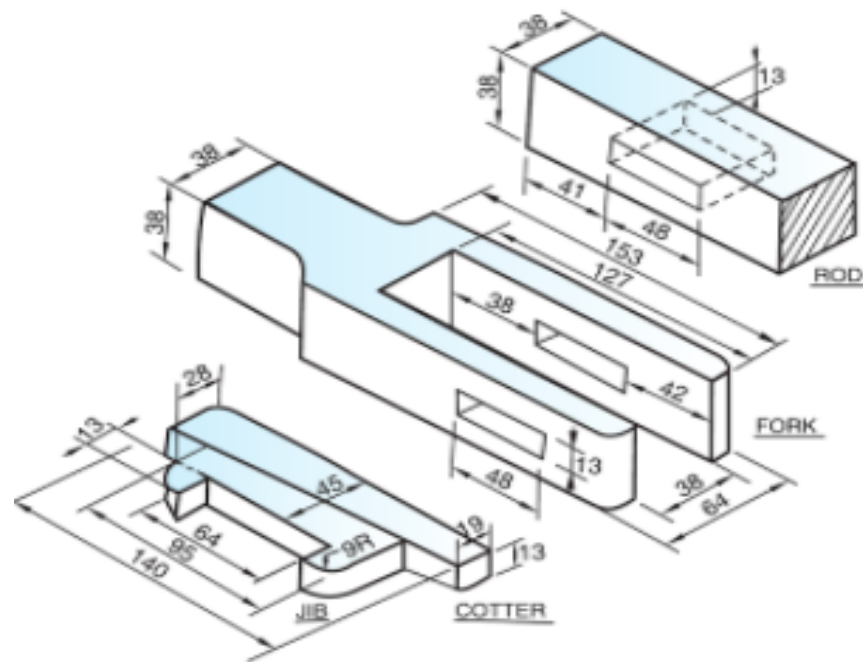


Figure -1

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- OR iii. The following figure-2 shows the details of stuffing box. Draw the Half sectional Front View of assembled stuffing box in their working position. **8**

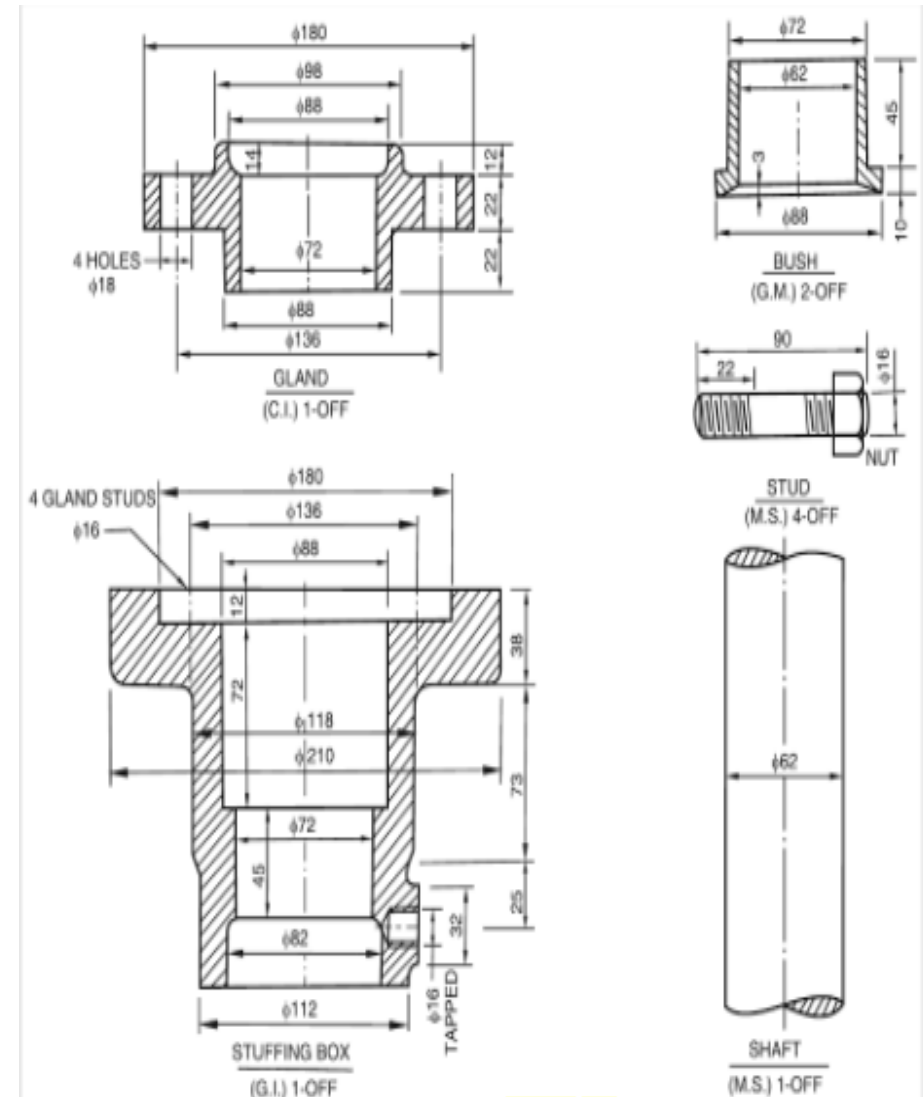


Figure-2

- Q.4 i. What do you mean by CAD? Give names of any four CAD software packages. **3**
 ii. What are the advantages of CAD? Explain any five utility commands in CAD. **7**

ME2CO04 Machine Drawing and CAD

Marking Scheme

Q.1	i.	Hatching lines are drawn at ___ degree to reference line:- (b) 45	1				
	ii.	this is the term for the range of tightness or looseness resulting from the allowances and tolerances in mating parts: (b) Fit	1				
	iii.	These are groups of components of a larger machine:- (a) Sub Assemblies	1				
	iv.	This type of thread is a thread on the inside of a member: (c) Internal Thread	1				
	v.	The default position of the UCS icon is positioned at _____ on the AutoCAD grid (a) 0,0,0	1				
	vi.	A cylinder can be created by drawing a rectangular shape then the _____ tool:- (a) Revolve	1				
	vii.	The MASSPROP shortcut will provide the following information (d) All the above	1				
	viii.	The 3-D commands on the Modelling toolbar include _____ (d) All the above	1				
	ix.	CAD programs which incorporate parametric modelling utilize a system in which the dimensions control the _____ (a) size and shape of the model features	1				
	x.	The Conceptual Visual Style tool is located on the _____ toolbar (a) Visual Styles	1				
Q.2	i.	Importance of dimensioning (½ marks *4 = 2 marks)	2				
	ii.	Conventional representation of External and Internal threads including V threads. (1 marks * 3 = 3 marks)	3				
	iii.	Types of dimensioning – 2 marks Terms and notations used for dimensioning- 3 marks	5				
OR	iv.	Draw conventional representation of the following (i) Slotted heads (ii) Splined shaft (iii) Bearing (iv) Spring (v) Gears . (1 marks * 5 = 5 marks)	5				
Q.3	i.	What is the difference between a cotter joint and knuckle joint? (1 marks * 2 = 2 marks)	2				
	ii.	1) Front View - 5 marks 2) Top View - 3 marks	8				
OR	iii.	Draw the Half sectional Front View of assembled stuffing box in their working position.	8				
Q.4	i.	Meaning of CAD - 1 mark Names of any four CAD software package - (½ marks *4 = 2 marks)	3				
	ii.	Advantages of CAD - 2 marks Five utility commands in CAD - (1 mark * 5 = 5 marks)	7				
OR	iii.	Important factors while drafting and designing a product – (1 mark * 4 = 4 marks) Example. 3 marks	7				
Q.5	i.	Meaning of WCS - 1 mark Meaning of UCS - 1 mark Steps to calculate area of a rectangle – 2 marks	4				
	ii.	Use of fillet command. - 2 marks Change fillet radius - 2 marks Effect of this command with zero radius - 2 marks	6				
OR	iii.	Constructional facilities available for producing 2D and 3D assembly drawings and views (1 marks * 6 = 6 marks)	6				
Q.6		Attempt any two:					
	i.	Comparison of 2D & 3D modelling systems (1 marks * 5 = 5 marks)	5				
	ii.	3D techniques (2.5 marks * 2 = 5 marks)	5				
	iii.	Utility of 3D modelling (1 marks * 5 = 5 marks)	5				
