



SSM INSTITUTE OF ENGINEERING AND TECHNOLOGY
Dindigul- Palani Highway, Dindigul – 624 002.

Department of Mechanical Engineering

06.07.2018

Submitted To Principal

Respected sir,

Sub: Proposal for conducting value added course (**MACHINE DRAWING**)

– Reg.

We have planned to conduct the training program on “**MACHINE DRAWING**” for II, III & IV year Mechanical Engineering students. We assure that this will be very useful for the students to enhance their knowledge in the field of Design.

Your approval is requested to conduct this program.

Thanking you

1. E. Sivaselvam
06/7/18

2. G. Vinoth Kumar
06/7/18

Course coordinator

E.SIVASELVAM AP/Mech,

G.VINOTH KUMAR AP/Mech,

L.H.
06/7/18
HOD/MECH

06/7/18
PRINCIPAL



SSM INSTITUTE OF ENGINEERING AND TECHNOLOGY

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Department of Mechanical Engineering

Date: 06.07.2018

CIRCULAR

It is planned to conduct a training program on “**MACHINE DRAWING**” for II,III & IV year B.E. Mechanical Engineering students from **16/07/2018** onwards. Students those who are interested to attend can register their name with Prof. G.VINOTH KUMAR. AP/ Mech on or before **13.07.2018**.

Details about the program

| | |
|-------------------------|--|
| No of students admitted | : 30 (on first come first serve basis) |
| Duration | : 15 days (30 hours) |
| Timing | : 4.30 to 6.30 pm (without disturbing remedial and coaching classes) |

Attendance for the program is compulsory for all days.

1. E. Sivaselvam
2. G. Vinoth Kumar

Course coordinators

E.SIVASELVAM AP/ Mech,

G.VINOTH KUMAR AP/Mech,


HOD/MECH


PRINCIPAL

“Hands on Training in Machine Drawing”

Value Added Course

Academic Year (2018-2019) Odd Semester

Total hours: 30 Hours

16.07.2018-10.09.2018



Department of Mechanical Engineering

SSM INSTITUTE OF ENGINEERING & TECHNOLOGY

Course Coordinators :

1. Mr. E. Sivaselvam,
2. Mr. G. Vinothkumar.

MACHINE DRAWING

COURSE OUTLINE

- Technical Graphics is used to communicate the necessary technical information required for manufacture and assembly of machine components. These drawings follow rules laid down in national and International Organizations for Standards (ISO).
- Hence the knowledge of the different standards is very essential. Students have to be familiar with industrial drafting practices and thorough understanding of production drawings to make themselves fit in industries. The following topics have been covered to fulfill the above objectives.
- Classification of Machine Drawings, Principles of Drawings, Sectioning, Dimensioning, Limits, Fits and Tolerance, Symbols and Conventional Representation, Screw Fasteners, Key Joints, Coupling and its Types, Riveted Joints, Welded Joints, Structural Applications, Assembly Drawings, Production Drawings, Reproduction of Drawing, Introduction of Computer Aided Drafting, Introduction of Solid 3D Modeling.

COURSE DETAIL

| S.No. | Topics |
|-------|--|
| 1. | Introduction <ul style="list-style-type: none">• Need of Graphical Language• Importance Machine Drawing Tools (from Instruments to Current Softwares) |
| 2. | Projections <ul style="list-style-type: none">• Designation• Relative position of views Examples |
| 3. | Classification of Machine Drawings (with examples) <ul style="list-style-type: none">• Assembly Drawing• Part Drawing• Detailed Drawing |
| 4. | Principles of Drawings <ul style="list-style-type: none">• Scales as per ISO standards, eg. A3 x 3 (420 x891)• Importance of Title Block and Part list• Lines types (Lines used in Machine Drawings) |
| 5. | Sectioning <ul style="list-style-type: none">• Cutting Planes and Section Hatching Lines• Half Sections• Aligned Sections• Offset Sections |
| 6. | Dimensions (with examples) <ul style="list-style-type: none">• Principle of Dimensioning• Counter Sink,• Counter Bores• Spot Faces• Chamfers• Screw Threads• Tapered Features |

| | |
|-----|--|
| 7. | Limits, Fits and Tolerance <ul style="list-style-type: none"> • Definitions • Classifications of Fits • System of Fits' Computations • Selection of Fits • Method of Indicating Fits on Drawings • Tolerance Grade • Computations of Tolerance • Positions of Tolerance • Fundamental of Deviations Shaft and Hole Terminology Method of Placing • Limit Dimensions |
| 8. | Abbreviations and Symbols |
| 9. | Screwed Fastenings <ul style="list-style-type: none"> • Types of Bolts • Designation • Types of Nuts • Types of Screw Designation of Bolted Joints • Stud Joints |
| 10. | Key Joints <ul style="list-style-type: none"> • Types of Key joints • Type of Cotter Joints • Types of Pin Joints and knuckle Joints |
| 11. | Riveted Joints <ul style="list-style-type: none"> • Introduction • Rivet and Riveting • Classification of Rivet Terminology of Riveted Joint Types of Joints |
| 12. | Welded Joints <ul style="list-style-type: none"> • Introduction of Welding Process • Types of Welded Joints • Representation of Welds Symbols and its conventions |
| 13. | Assembly Drawings Practice <ul style="list-style-type: none"> • Sleeve and cotter joint • Spigot and socket joint • Gib and cotter joint • Knuckle joint • Flange coupling • Plummer block • Screw jack |

LECTURE 1

INTRODUCTION TO MACHINE

DRAWING

1. Graphic Language

A technical person can use the graphic language as powerful means of communication with others for conveying ideas on technical matters. However, for effective exchange of ideas with others, the engineer must have proficiency in (i) language, both written and oral, (ii) symbols associated with basic sciences and (iii) the graphic language. Engineering drawing is a suitable graphic language from which any trained person can visualize the required object. As an engineering drawing displays the exact picture of an object, it obviously conveys the same ideas to every trained eye. Irrespective of language barriers, the drawings can be effectively used in other countries, in addition to the country where they are prepared. Thus, the engineering drawing is the universal language of all engineers.

2. Importance of Graphic Language

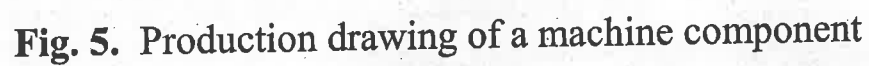
The graphic language had its existence when it became necessary to build new structures and create new machines or the like, in addition to representing the existing ones. In the absence of graphic language, the ideas on technical matters have to be conveyed by speech or writing, both are unreliable and difficult to understand by the shop floor people for manufacturing. This method involves not only lot of time and labor, but also manufacturing errors. Without engineering drawing, it would have been impossible to produce objects such as aircrafts, automobiles, locomotives, etc., each requiring thousands of different components.

3. Need for Correct Drawings.

The drawings prepared by any technical person must be clear, unmistakable in meaning and there should not be any scope for more than one interpretation, or else litigation may arise. In a number of dealings with contracts, the drawing is an official document and the success or failure of a structure depends on the clarity of details provided on the drawing. Thus, the drawings should not give any scope for misinterpretation even by accident.

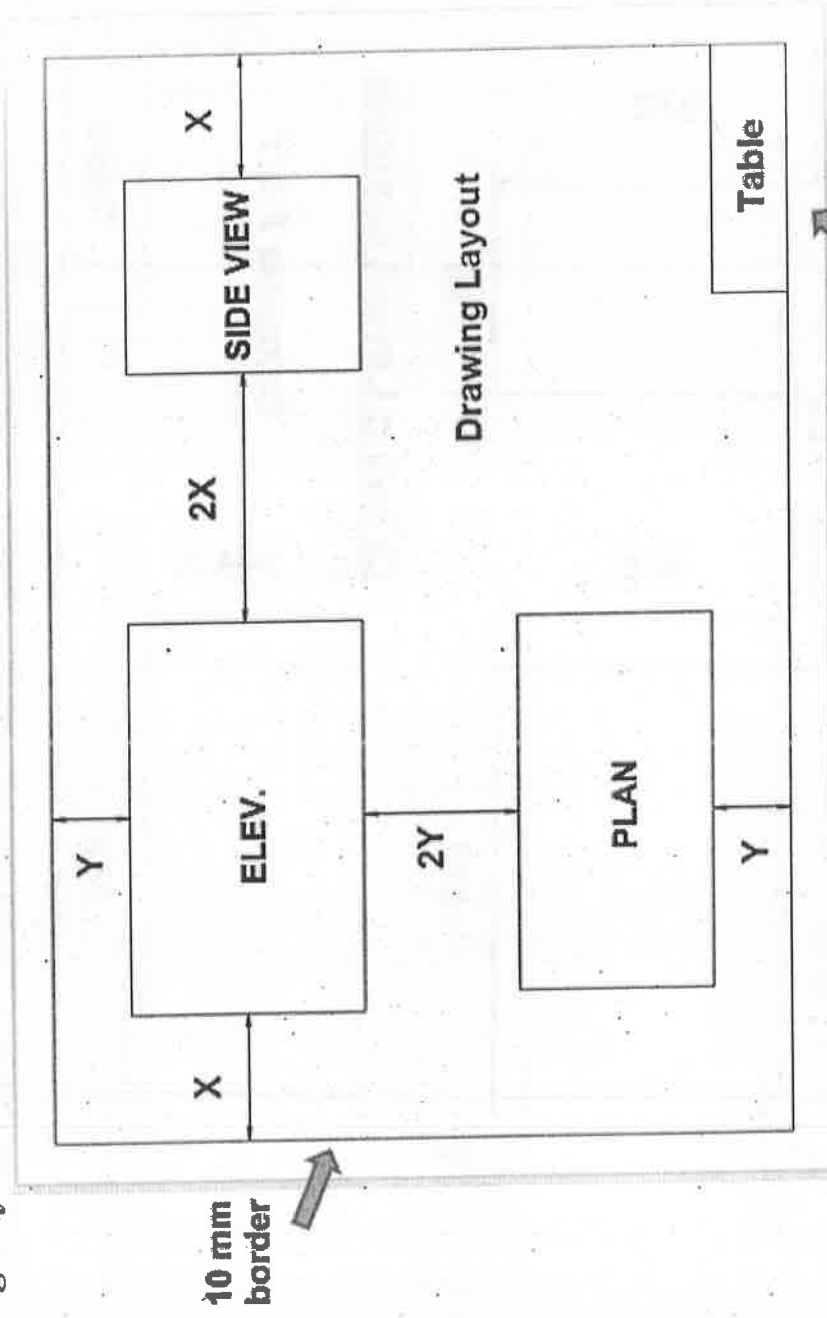
It would not have been possible to produce the machines/automobiles on a mass scale where a number of assemblies and sub-assemblies are involved, without clear, correct and accurate drawings. To achieve this, the technical person must gain a thorough knowledge of both the principles and conventional practice of drawing. If these are not achieved and or practiced, the drawings prepared by one, may convey different meaning to others, causing unnecessary delays and expenses in production shops.

4.1.3 Production Drawing
A production drawing, also referred to as working drawing, should furnish all the dimensions, limits and special finishing processes such as heat treatment, honing, lapping, surface finish, etc., to guide the craftsman on the shop floor in producing the component. The title should also mention the material used for the product, number of parts required for the assembled unit, etc. Fig. 5 shows an example of a production drawing (Note that the drawing was drawn according to a different drawing standard)



5. Drawing Layout

5.1 Drawing Layout



Write your name and seat number here with Blue ink

Fig. 7. Drawing Layout.

5.3 Drawing Layout example solution

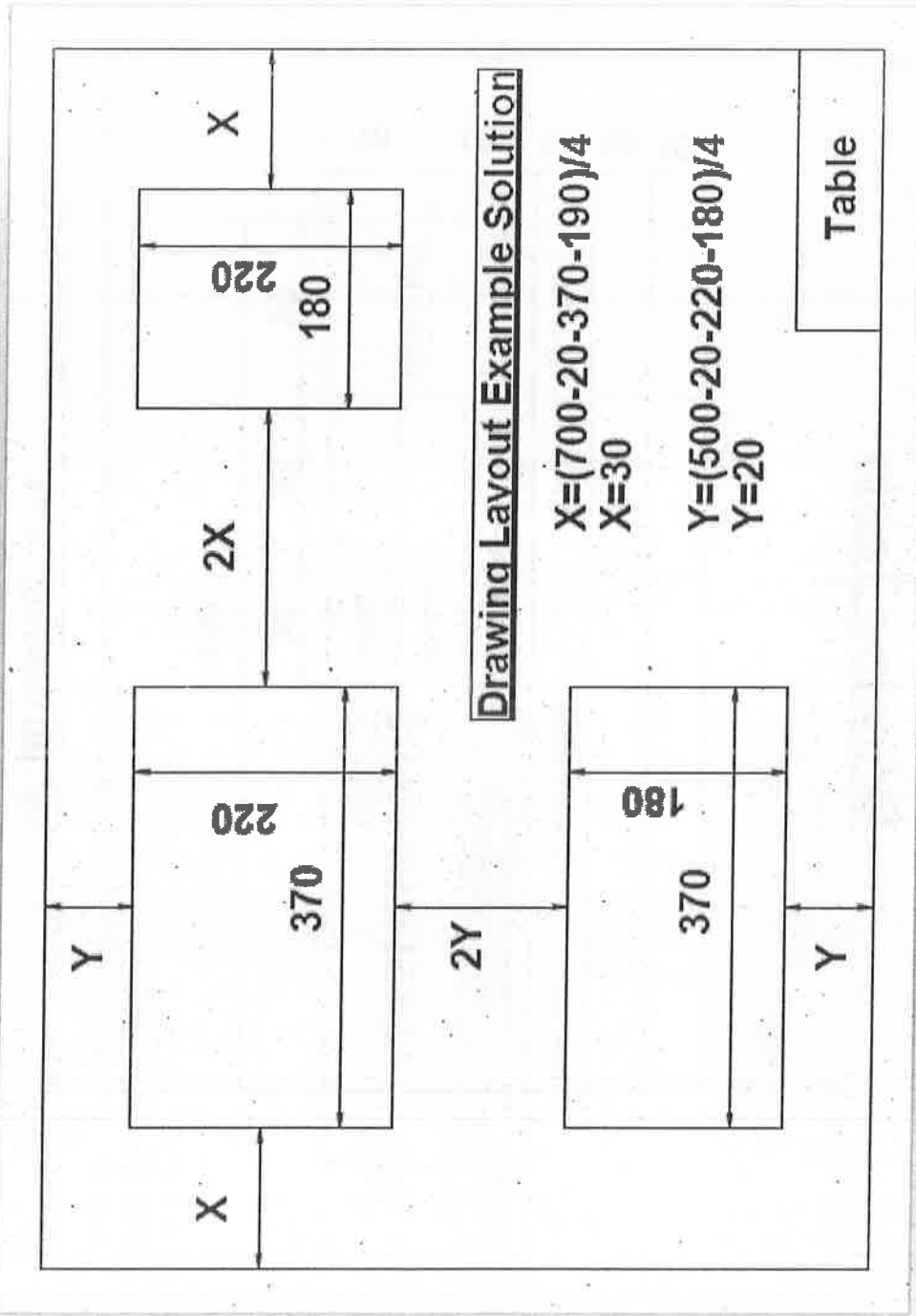


Fig. 9. Drawing Layout Example Solution.

5.5 An example of filled table

| | | | | | | | | | |
|---|--|-----------|--|-----------|--|-------------|--|----|--|
| <u>Drawing Table - filled</u> | | | | | | | | | |
| 20 | | PIN | | ST | | 3 | | 18 | |
| 1 | | FRAME | | CI | | 1 | | 10 | |
| PART No. | | PART NAME | | MAT. | | NO. OFF | | 10 | |
| Faculty of Engineering Alexandria University | | DATE | | 1/10/2015 | | SECTION NO. | | 18 | |
| C-CLAMP | | SCALE | | 1:1 | | DRAG NO. | | 1 | |
| | | DIMS | | mm | | | | | |
| 12 | | 20 | | 30 | | 30 | | 18 | |
| 24 | | 150 | | | | | | | |

Fig. 11. Filled-Drawing Table.

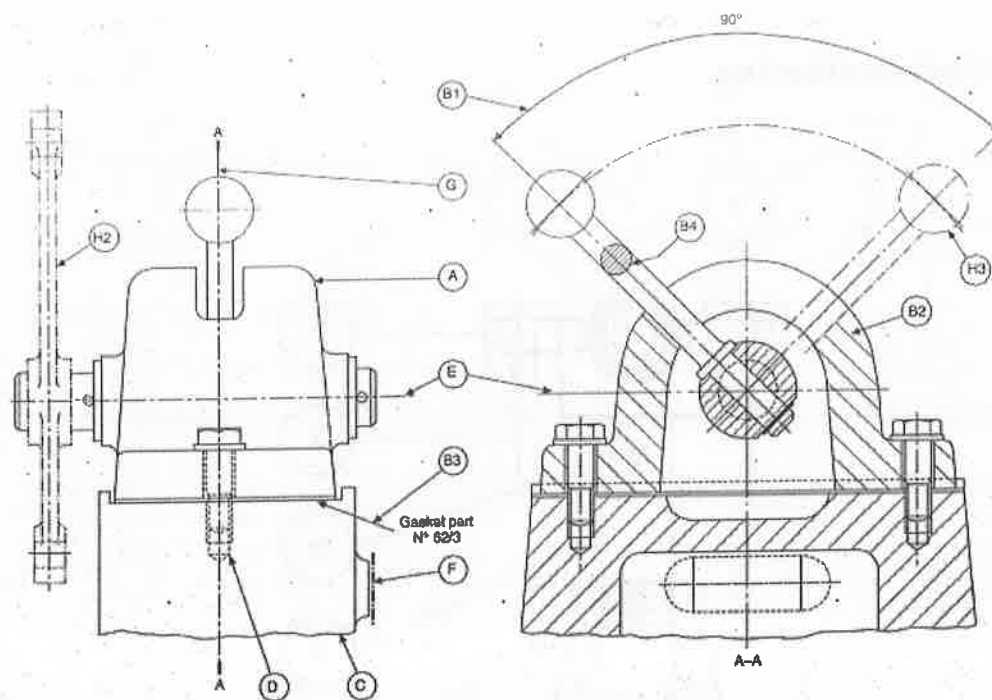


Fig. 12. Example of different line types.

Interrupted view application

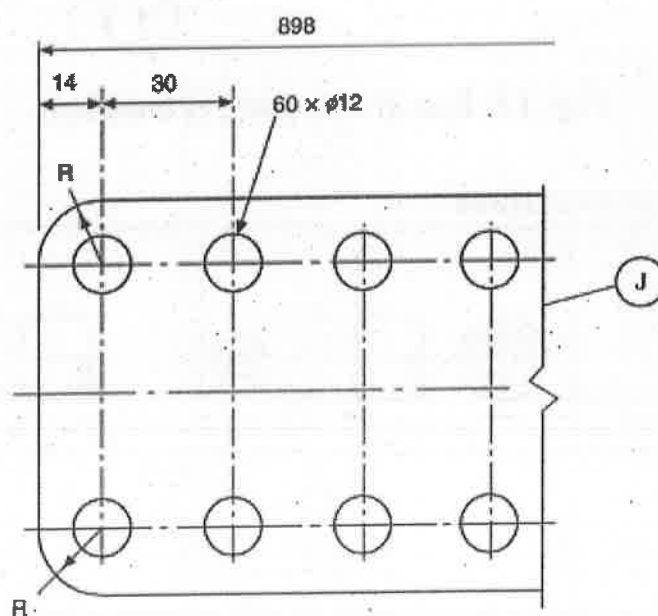
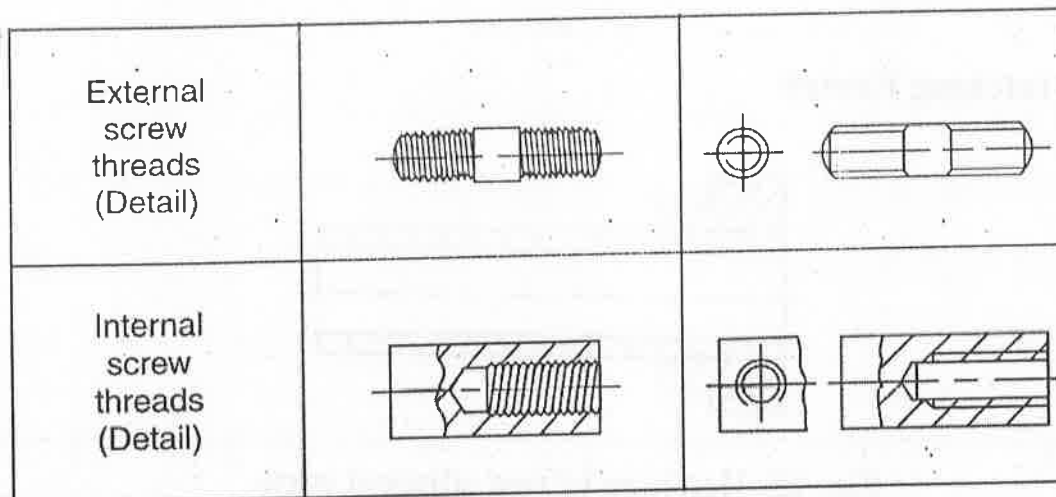


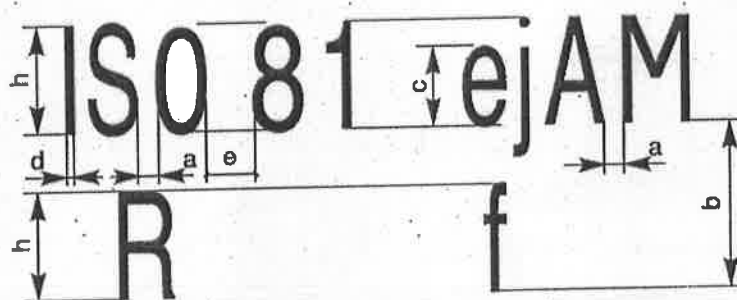
Fig. 13. Interrupted view example.



6.4 Abbreviations for Materials

| Material | Abbreviation |
|-----------------|--------------|
| Aluminum | AL |
| Bronze | BRZ |
| Cast Iron | C.I. |
| Stainless Steel | ST. |

7. Lettering



| Characteristic | Ratio | Dimensions, (mm) | | | | | | | |
|--|-------|------------------|------|------|------|-----|-----|----|-----|
| Lettering height (Height of capitals) | h | $(14/14)h$ | 2.5 | 3.5 | 5 | 7 | 10 | 14 | 20 |
| Height of lower-case letters (without stem or tail) | c | $(10/14)h$ | — | 2.5 | 3.5 | 5 | 7 | 10 | 14 |
| Spacing between characters | a | $(2/14)h$ | 0.35 | 0.5 | 0.7 | 1 | 1.4 | 2 | 2.8 |
| Minimum spacing of base lines | b | $(20/14)h$ | 3.5 | 5 | 7 | 10 | 14 | 20 | 28 |
| Minimum spacing between words | e | $(6/14)h$ | 1.05 | 1.5 | 2.1 | 3 | 4.2 | 6 | 8.4 |
| Thickness of lines | d | $(1/14)h$ | 0.18 | 0.25 | 0.35 | 0.5 | 0.7 | 1 | 1.4 |

Indicate the correct and incorrect methods of sectioning of machine elements represented in Fig. 14.

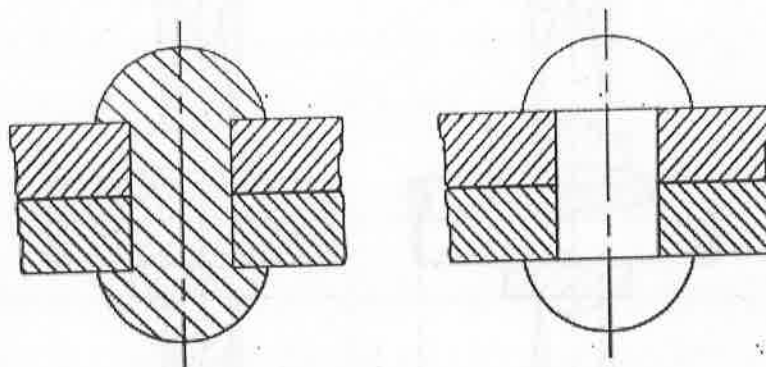


Fig. 17. Hatching of two adjacent parts.

Indicate the correct and incorrect methods of sectioning of machine elements represented in Fig. 15.

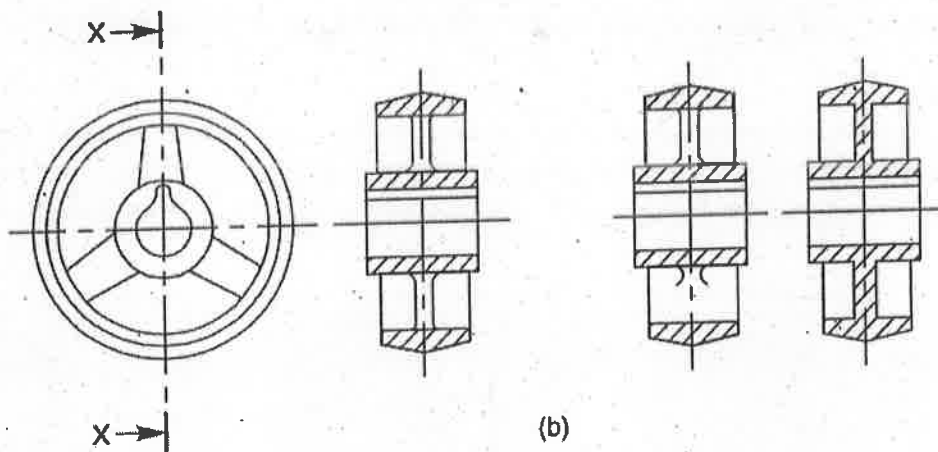


Fig. 18. Hatching of two adjacent parts.

Indicate the correct and incorrect methods of sectioning of machine elements represented in Fig. 19.

9. Sectional View

A sectional view is obtained by imagining the object, as if cut by a cutting plane and the portion between the observer and the section plane being removed. Figure 4.1a shows an object, with the cutting plane passing through it and Fig., the two halves drawn apart, exposing the interior details.

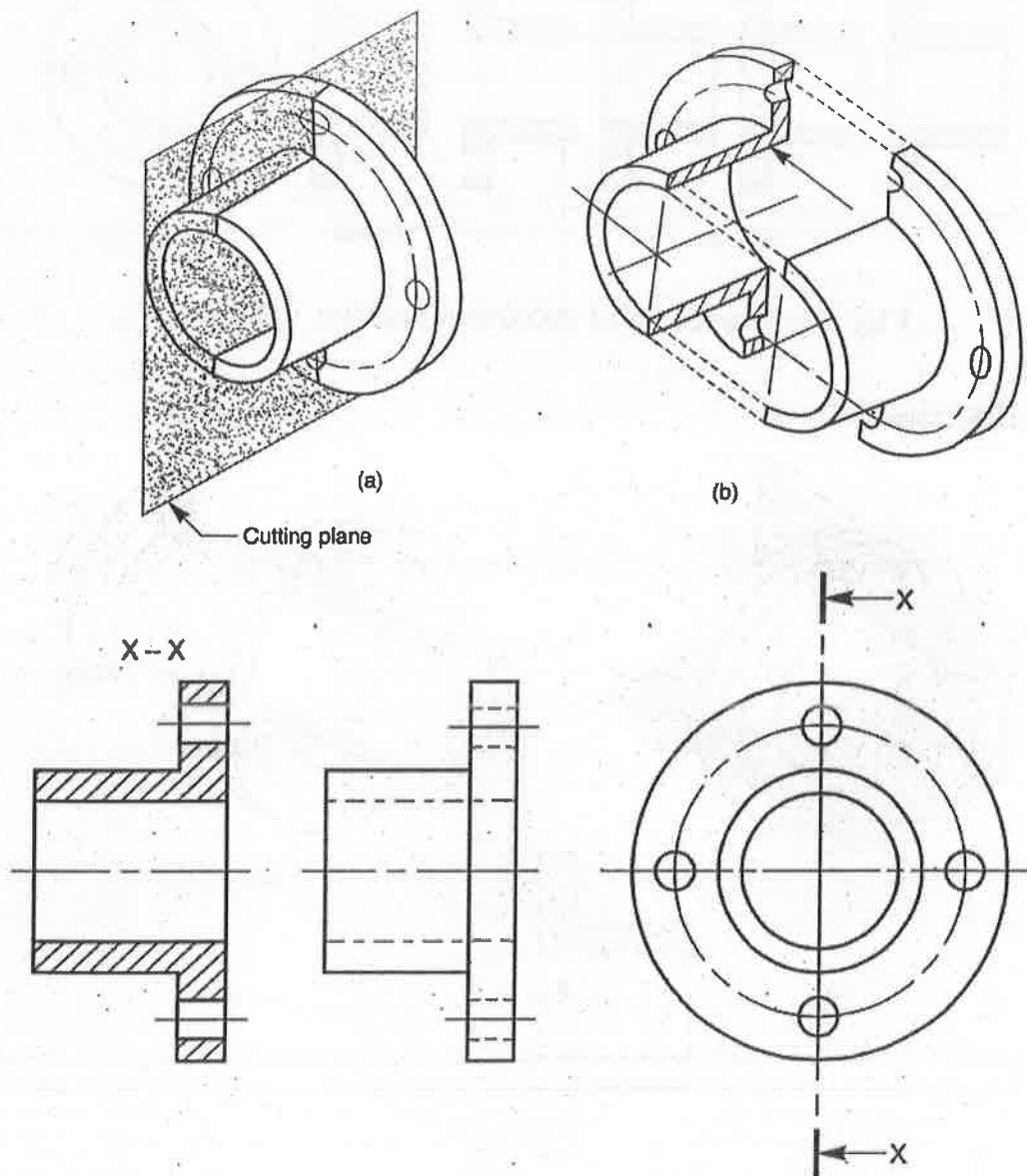


Fig. 20. Section Example.

10. First and Third Angle Projection

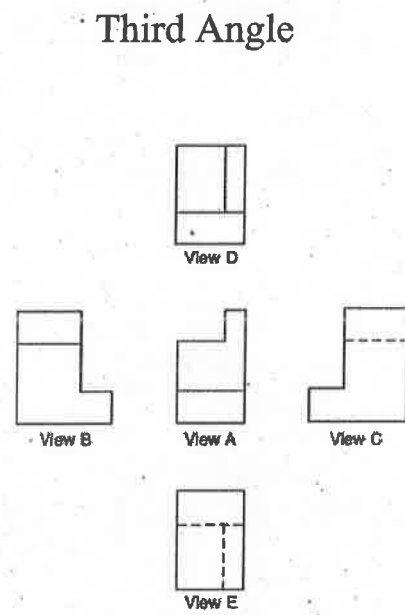
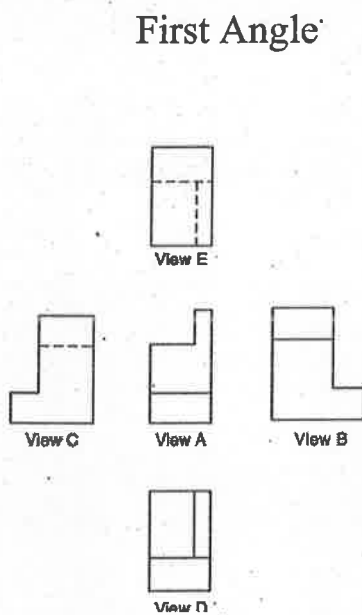
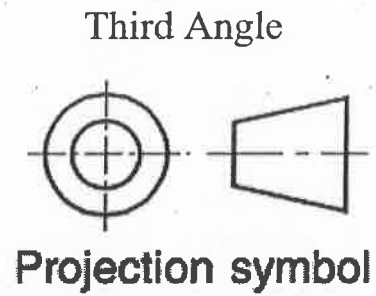
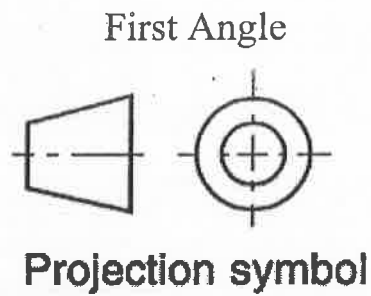
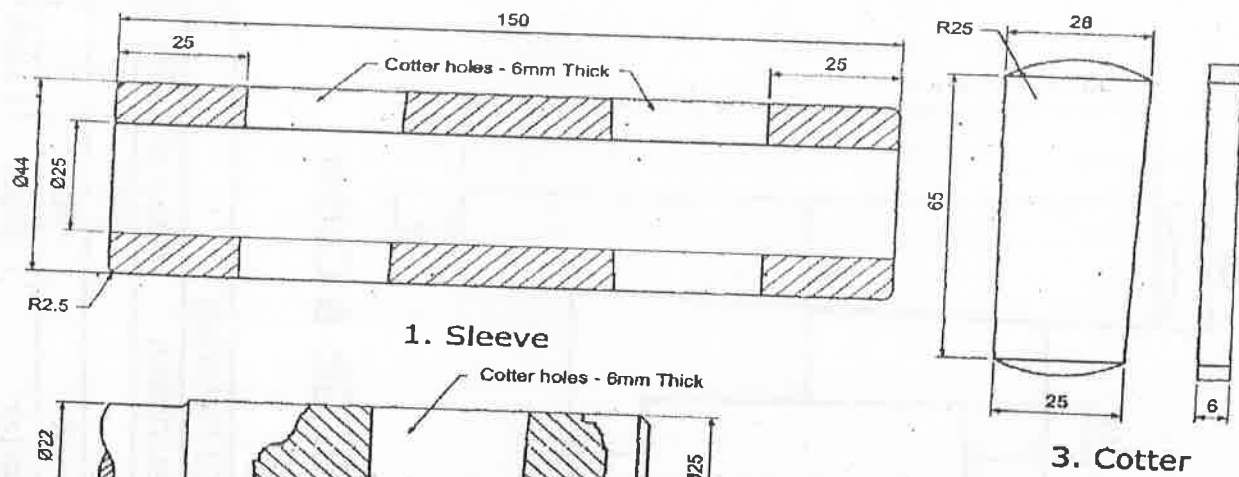


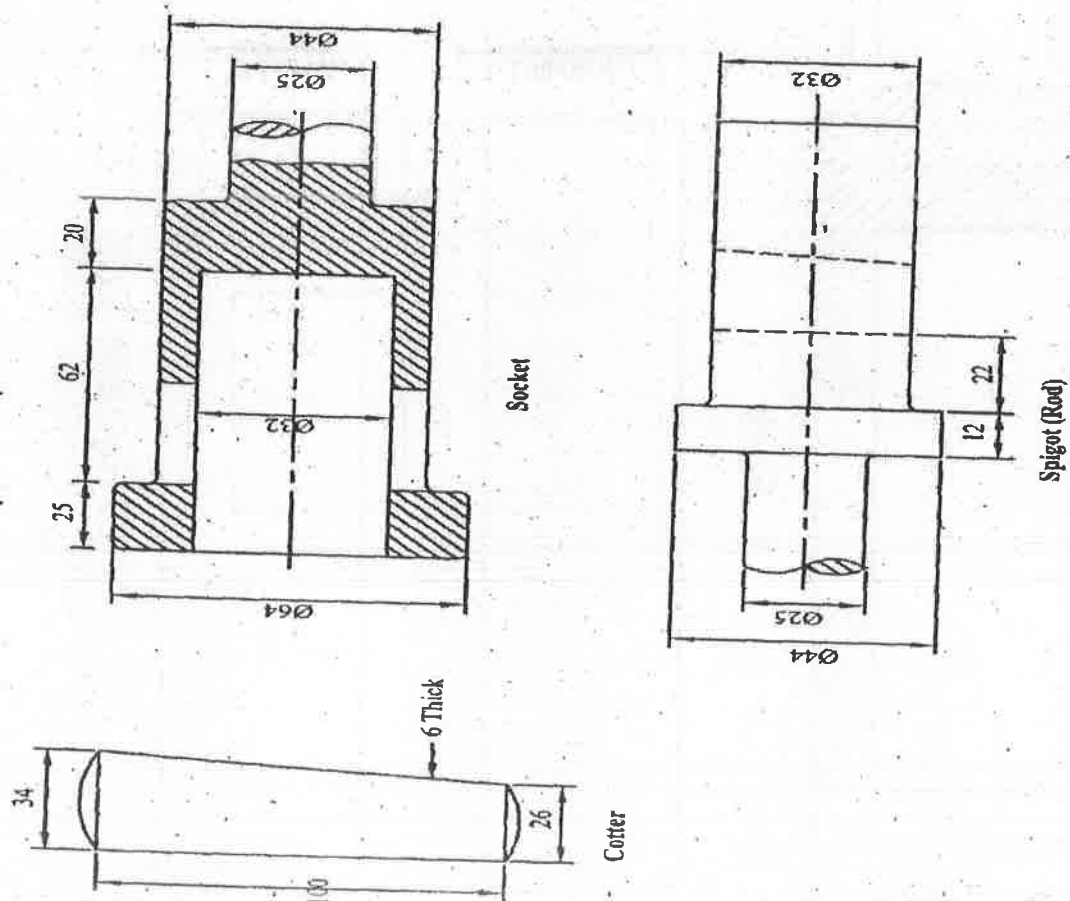
Fig. 23. First and Third Angle Projection.

ASSEMBLY OF SLEEVE AND COTTER JOINT



| Bill Of Materials | | | |
|-------------------|----------------|----------|-----|
| Sl no | Description | Material | Qty |
| 1 | Sleeve | MS | 1 |
| 2 | Connecting rod | MS | 2 |
| 3 | Cotter | Steel | 2 |

ASSEMBLY OF SOCKET AND SPIGOT JOINT



Detailed Drawing of Socket and Spigot Joint

SCALE: 1:1

All dimensions are in mm

Front View: Shows the main profile of the part. Key dimensions include a total length of 147 mm, a top width of 60 mm, and a bottom width of 30 mm. It features several curved sections with radii R38, R36, and R32. Holes are located at various positions along the length.

Top View: Shows the plan view of the part. It highlights the circular cross-sections of the holes and the overall footprint. Dimensions include a maximum width of 60 mm and a central hole diameter of $\phi 30$.

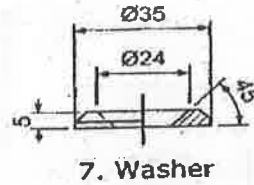
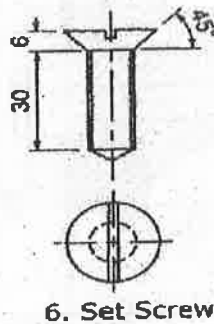
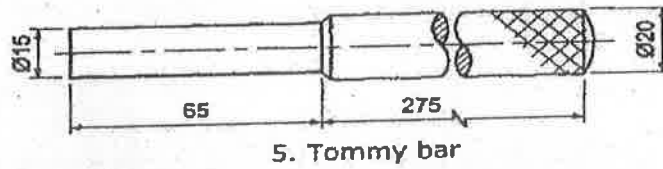
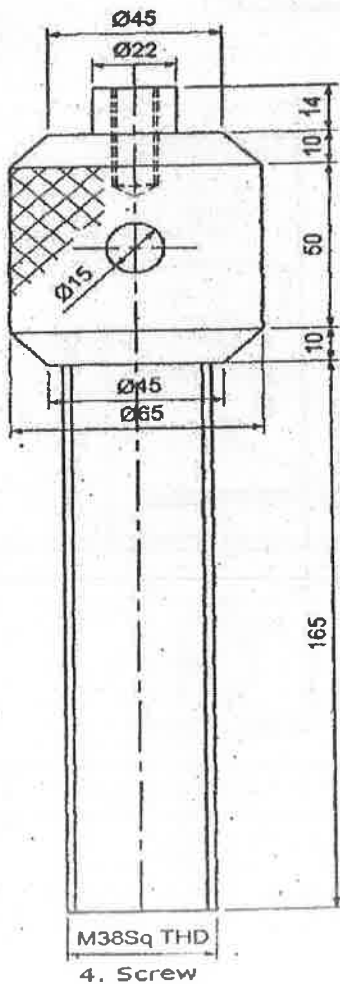
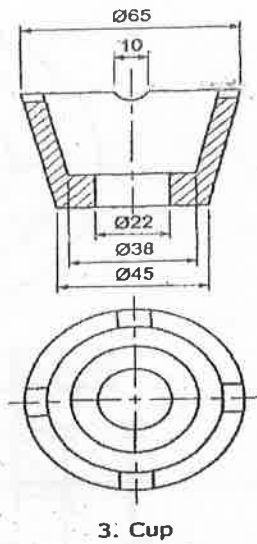
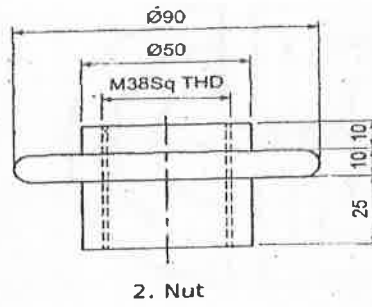
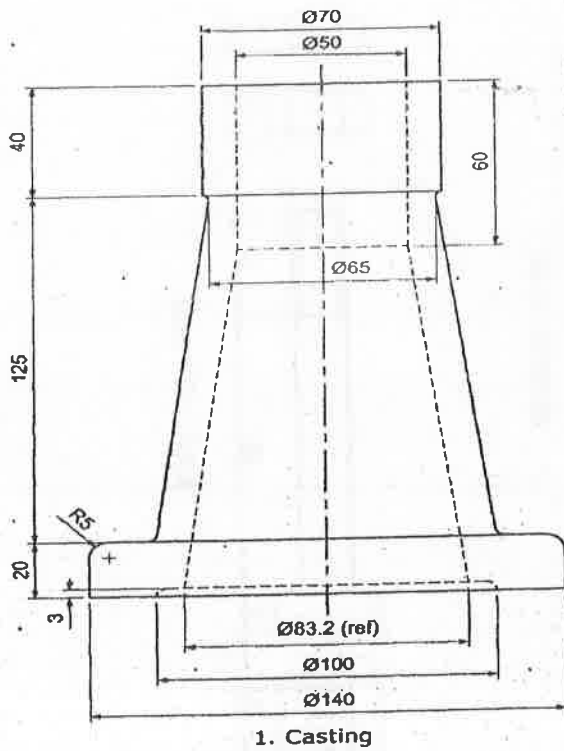
Left Side View: Shows the side profile from the left. It indicates a total height of 45 mm and a base thickness of 15 mm. A hole is shown with a diameter of $\phi 6$ and a note "HOLE TO SUIT $\phi 6$, TAPER PIN".

Right Side View: Shows the side profile from the right. It shows a similar height of 45 mm and a base thickness of 15 mm. Another hole is indicated with a diameter of $\phi 6$ and a note "HOLE TO SUIT $\phi 6$, TAPER PIN".

Labels and Notes:

- OCTAGONAL END
- FORK END
- EYE END
- OCTAGONAL END
- TAPER PIN
- COLLAR
- HOLE TO SUIT $\phi 6$, TAPER PIN

ASSEMBLY OF SCREW JACK



| Bill Of Materials | | | |
|-------------------|-------------|----------|-----|
| Sl no | Description | Material | Qty |
| 1 | Casting | CI | 1 |
| 2 | Nut | MS | 1 |
| 3 | Cup | MS | 1 |
| 4 | Screw | MS | 1 |
| 5 | Tommy bar | MS | 1 |
| 6 | Set Screw | MS | 1 |
| 7 | Washer | MS | 1 |



| S.N | Year/ Section | Reg.no. | Date | 16/01 | 17/01 | 18/01 | 19/01 | 20/01 | 21/01 | 22/01 | 23/01 | 24/01 | 25/01 | 26/01 | 27/01 | 28/01 | 29/01 | 30/01 |
|-----|------------------|--------------|--------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1 | II-A | 922117114001 | ADITHYAN B | / | / | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 2 | | 922117114006 | ARUNSELVAN K | / | / | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 3 | | 922117114007 | ARUN KUMAR E | / | / | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 4 | | 922117114018 | DEEPAK RAJ D | / | / | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 5 | | 922117114019 | DEEPAKRAJ T | / | / | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 6 | | 922117114025 | DIVYA DHARSHINI K | / | / | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 7 | | 922117114026 | ESAKKI DURAI PANDI M | / | / | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 8 | | 922117114027 | ETHIRAJ YOGESH P | / | / | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 9 | | 922117114028 | GAJENDREN R | / | / | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 10 | | 922117114030 | GRACE A | / | / | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 12 | II-B | 922117114043 | JEGAN ROY J | / | / | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 13 | | 922117114044 | JEROME F | / | / | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 14 | | 922117114049 | KASI VISWANATHAN K | / | / | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 15 | | 922117114053 | MANICKAVEL V | / | / | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 16 | | 922117114054 | MANIKANDAN P | / | / | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 17 | | 922117114055 | MANIKANDARAJA M | / | / | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 18 | | 922117114056 | MANOJ KUMAR T | / | / | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 19 | | 922117114058 | MATHANRAJ G | / | / | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 20 | | 922117114062 | MOHAMED SYED ABUTHAHIR M | / | / | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 21 | | 922117114063 | MOHAMED THARIQ G | / | / | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 22 | II-C | 922117114064 | MONISHKUMAR M | / | / | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 23 | | 922117114065 | MUJIPUR RAHMAN J | / | / | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 24 | | 922117114066 | NAGARAJ A | / | / | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 25 | | 922117114067 | NAGA SARAVAN B | / | / | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 26 | | 922117114075 | NITHIS C | / | / | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 27 | | 922117114076 | NITHIS KUMAR K | / | / | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 28 | | 922117114078 | PANDIYA RAJ B | / | / | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 29 | | 922117114079 | PARAMESHWARAN M | / | / | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 30 | | 922117114080 | PARTHASARATHI K B | / | / | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 31 | | 922117114123 | VINOTH KUMAR R | / | / | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 32 | II-C | 922117114124 | VISHNU BALAJI M | / | / | / | / | / | / | / | / | / | / | / | / | / | / | / |
| 33 | | 922117114126 | YOKESWARAN M S | / | / | / | / | / | / | / | / | / | / | / | / | / | / | / |

K.V. 17/01/24
Course coordinators

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DEPARTMENT OF MECHANICAL ENGINEERING

VALUE ADDED COURSE ON MACHINE DRAWING

(16.07.18 to 10.09.18)

Evaluation Questionnaire for Value Added Course on Machine Drawing

1-The following is not included in title block of drawing sheet.

- a. Sheet No
- b. Scale
- c. Method of Projection
- ☒ d. Size of sheet

2-Which of the following represent reducing scale?

- a. 1:1
- ☒ b. 1:2
- c. 2:1
- d. 10:1

3-In first angle projection method, object is assumed to be placed in

- ☒ a. First quadrant
- b. Second quadrant
- c. Third Quadrant
- d. Fourth quadrant

4-The following line is used for visible outlines

- a. Continuous thick
- ☒ b. Continuous thin
- c. Chain thin line
- d. Short zigzag thin

5-The following line is used for dimension line

- ☒ a. Continuous thick
- b. Continuous thin
- c. Chain thin line
- d. Short zigzag thin

6-The dotted lines represents

- a. Hidden edges
- ☒ b. Projection line
- c. Centre line
- d. Hatching line

7-Hatching lines are drawn at _____ degree to reference line

- a. 30
- ☒ b. 45
- c. 60
- d. 90

8-In aligned system of dimensioning, the dimensions may be read from

- ☒ a. Bottom or right hand edges
- b. Bottom or left hand edges
- c. Only from bottom
- d. Only from left side

9-The Length:Width in case of an arrow head is

- a. 1:1
- ☒ b. 2:1

- c. 3:1
- d. 4:1

11- The internal angle of regular pentagon is ____ degree.

- ☒ a. 72
- b. 108
- c. 120
- d. 150

12- The internal angle of regular hexagon is ____ degree.

- a. 72
- b. 108
- ☒ c. 120
- d. 150

13- A point 'P' is above Horizontal Plane (HP) and in front of Vertical Plane (VP). The point is in

- ☒ a. First quadrant
- b. Second quadrant
- c. Third quadrant
- d. Fourth quadrant

14- The side view of an object is drawn in

- a. Vertical plane
- b. Horizontal plane
- ☒ c. Profile plane
- d. Any of the above

15- Which type of line is part of a dimension?

- a. break lines
- b. phantom lines
- ☒ c. extension lines
- d. cutting plane lines

16- Which line type is thin and light?

- a. visible lines
- b. center lines
- ☒ c. construction lines
- d. all of the above

17- Which line type is thick and black?

- ☒ a. visible lines
- b. center lines
- c. construction lines
- d. all of the above

18- The top, front, and bottom views align in this manner:

- a. Horizontally
- ☒ b. Vertically
- c. According to the planar views
- d. Parallel to the frontal plane

19- If a plane is parallel to the plane of projection, it appears:

- a. True size
- b. As a line or edge
- c. Foreshortened
- ☒ d. As an oblique surface

20- This line pattern is composed of three dashes, one long dash on each end with a short dash in the middle:

- a. Object
- b. Hidden
- c. Center
- ☒ d. Phantom



SSM INSTITUTE OF ENGINEERING AND TECHNOLOGY

Dindigul-Palani Highway, Dindigul - 624 002, Tamilnadu

Tel. No: 0451-2448800-899 (100 lines) Fax : 0451-2448855

E-mail : ssmietdel@gmail.com

DEPARTMENT OF MECHANICAL ENGINEERING

VALUE ADDED COURSE ON MACHINE DRAWING

(16.07.18 to 10.09.18)

Name: K. NITHASHKUMAR
Reg.no: 922117114076

Sec: 'B'

Evaluation Questionnaire for Value Added Course on Machine Drawing

1-The following is not included in title block of drawing sheet.

- a. Sheet No
- b. Scale
- c. Method of Projection
- d. ☒ Size of sheet

2-Which of the following represent reducing scale?

- a. 1:1
- b. ☒ 1:2
- c. 2:1
- d. 10:1

3-In first angle projection method, object is assumed to be placed in

- a. ☒ First quadrant
- b. Second quadrant
- c. Third Quadrant
- d. Fourth quadrant

4-The following line is used for visible outlines

- a. ☒ Continuous thick
- b. Continuous thin
- c. Chain thin line
- d. Short zigzag thin

5-The following line is used for dimension line

- a. ☒ Continuous thick
- b. Continuous thin
- c. Chain thin line
- d. Short zigzag thin

6-The dotted lines represents

- a. ☒ Hidden edges
- b. Projection line
- c. Centre line
- d. Hatching line

7-Hatching lines are drawn at _____ degree to reference line

- a. 30
- b. ☒ 45
- c. 60
- d. 90

8-In aligned system of dimensioning, the dimensions may be read from

- a. ☒ Bottom or right hand edges
- b. Bottom or left hand edges
- c. Only from bottom
- d. Only from left side

9-The Length:Width in case of an arrow head is

- a. 1:1
- b. ☒ 2:1

c/ 3:1

d. 4:1

11- The internal angle of regular pentagon is ____ degree.

a/ 72

b. 108

c. 120

d. 150

12- The internal angle of regular hexagon is ____ degree.

a/ 72

b. 108

c. 120

d. 150

13- A point 'P' is above Horizontal Plane (HP) and in front of Vertical Plane (VP). The point is in

a. First quadrant

b. Second quadrant

c/ Third quadrant

d. Fourth quadrant

14- The side view of an object is drawn in

a/ Vertical plane

b. Horizontal plane

c. Profile plane

d. Any of the above

15- Which type of line is part of a dimension?

a. break lines

b. phantom lines

c/ extension lines

d. cutting plane lines

16- Which line type is thin and light?

a. visible lines

b. center lines

c/ construction lines

d. all of the above

17- Which line type is thick and black?

a/ visible lines

b. center lines

c/ construction lines

d. all of the above

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a. Horizontally

b/ Vertically

c. According to the planar views

d. Parallel to the frontal plane

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a/ True size

b/ As a line or edge

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d. As an oblique surface

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b. Hidden

c/ Center

d. Phantom

100%

F. Stimmel



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DEPARTMENT OF MECHANICAL ENGINEERING

VALUE ADDED COURSE ON MACHINE DRAWING

(16.07.18 to 10.09.18)

Evaluation Questionnaire for Value Added Course on Machine Drawing

1-The following is not included in title block of drawing sheet.

- a. Sheet No
- b. Scale
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- ☒ d. Size of sheet

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- c. 2:1
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- c. Third Quadrant
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- d. Short zigzag thin

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- c. Chain thin line
- d. Short zigzag thin

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- b. Projection line
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- d. 90

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9-The Length:Width in case of an arrow head is

- a. 1:1
- ☒ b. 2:1

- ☒ c. 3:1
- ☐ d. 4:1

11- The internal angle of regular pentagon is ____ degree.

- ☒ a. 72
- ☐ b. 108
- ☐ c. 120
- ☐ d. 150

12- The internal angle of regular hexagon is ____ degree.

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- ☐ c. 120
- ☐ d. 150

13- A point 'P' is above Horizontal Plane (HP) and in front of Vertical Plane (VP). The point is in

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- ☐ b. Horizontal plane
- ☐ c. Profile plane
- ☐ d. Any of the above

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- ☐ b. phantom lines
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- ☐ d. cutting plane lines

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- ☐ c. According to the planar views
- ☐ d. Parallel to the frontal plane

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- ☐ b. Hidden
- ☒ c. Center
- ☐ d. Phantom

857.
E. Stumel



SSM INSTITUTE OF ENGINEERING AND TECHNOLOGY

Dindigul- Palani Highway, Dindigul – 624 002.

Department of Mechanical Engineering


Value Added Course (2018-2019) Odd Semester

Course Name : Hands on training on Hands on Machine Drawing

Course Coordinators: E.SIVASELVAM & G.VINOTH KUMAR

MARKS STATEMENT FOR VALUE ADDED COURSE

| S.No | Reg.No | Name of the Student | Marks Scored |
|------|--------------|--------------------------|--------------|
| 1 | 922117114001 | ADITHYAN | 90 |
| 2 | 922117114006 | ARULSELVAN K | 85 |
| 3 | 922117114007 | ARUN KUMAR E | 85 |
| 4 | 922117114018 | DEEPAK RAJ D | 85 |
| 5 | 922117114019 | DEEPAK RAJ T | 75 |
| 6 | 922117114025 | DIVYA DHARSHINI K | 85 |
| 7 | 922117114026 | M.ESAKKI DURAI PANDI | 85 |
| 8 | 922117114027 | ETHIRAJ YOGESH P | 90 |
| 9 | 922117114028 | GAJENDREN.R | 75 |
| 10 | 922117114030 | GRACE A | 85 |
| 11 | 922117114043 | JEGAN ROY J | 90 |
| 12 | 922117114044 | JEROME .F | 75 |
| 13 | 922117114049 | K KASI VISWANATHAN | 85 |
| 14 | 922117114053 | MANICKAVEL V | 85 |
| 15 | 922117114054 | MANIKANDAN P | 85 |
| 16 | 922117114055 | MANIKANDARAJA M | 90 |
| 17 | 922117114056 | MANOJKUMAR T | 75 |
| 18 | 922117114058 | MATHANRAJ G | 85 |
| 19 | 922117114062 | MOHAMED SYED ABUTHAHIR M | 85 |
| 20 | 922117114063 | MOHAMED THARIQ G | 90 |
| 21 | 922117114064 | MONISHKUMAR.M | 90 |
| 22 | 922117114065 | MUJIPUR RAHMAN | 90 |
| 23 | 922117114066 | A.NAGARAJ | 85 |
| 24 | 922117114067 | NAGA SARAVAN B | 90 |
| 25 | 922117114075 | NITHIS C | 85 |
| 26 | 922117114076 | NITHIS KUMAR K | 100 |
| 27 | 922117114078 | PANDIYA RAJ B | 95 |
| 28 | 922117114079 | PARAMESHWARAN M | 90 |
| 29 | 922117114080 | K.B.PARTTHASARATHI | 90 |
| 30 | 922117114123 | R.VINOTH KUMAR | 90 |
| 31 | 922117114124 | VISHNU BALAJI M | 85 |
| 32 | 922117114126 | YOKESWARAN M S | 90 |


Faculty Incharge


HoD/Mech.Engg


Principal



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DEPARTMENT OF MECHANICAL ENGINEERING

VALUE ADDED COURSE ON MACHINE DRAWING

(16.07.18 to 10.09.18)

FEED BACK FORM

DATE: 08/11/2018

| | |
|---------------------|--|
| NAME OF THE STUDENT | K. Nithis kumar |
| YEAR | II year |
| CONTACT NO./ EMAIL | 9944693299 / nithis kumar 115 @gmail.com |

| | |
|---|---|
| 1. Course objective and scope in the industry (Please put ✓ mark) | <input type="checkbox"/> Excellent <input checked="" type="checkbox"/> Good <input type="checkbox"/> Average <input type="checkbox"/> Poor |
| 2. Knowledge and exposure of the trainer in the domain (Please put ✓ mark) | <input checked="" type="checkbox"/> Excellent <input type="checkbox"/> Good <input type="checkbox"/> Average <input type="checkbox"/> Poor |
| 3. Content coverage (Please put ✓ mark) | <input type="checkbox"/> Excellent <input checked="" type="checkbox"/> Good <input type="checkbox"/> Average <input type="checkbox"/> Poor |
| 4. Usefulness (Please put ✓ mark) | <input type="checkbox"/> Excellent <input checked="" type="checkbox"/> Good <input type="checkbox"/> Average <input type="checkbox"/> Poor |
| 5. Explanation and Clarity (Please put ✓ mark) | <input checked="" type="checkbox"/> Excellent <input type="checkbox"/> Good <input type="checkbox"/> Average <input type="checkbox"/> Poor |



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DEPARTMENT OF MECHANICAL ENGINEERING

VALUE ADDED COURSE ON MACHINE DRAWING

(16.07.18 to 10.09.18)

FEED BACK FORM

DATE: 3-11-18

| | |
|---------------------|---------------------------------------|
| NAME OF THE STUDENT | T. MANOJKUMAR |
| YEAR | 2 nd year. |
| CONTACT NO./ EMAIL | 8072470486/ kumarmanoj45391@gmail.com |

| | |
|---|---|
| 1. Course objective and scope in the industry (Please put ✓ mark) | <input type="checkbox"/> Excellent <input checked="" type="checkbox"/> Good <input type="checkbox"/> Average <input type="checkbox"/> Poor |
| 2. Knowledge and exposure of the trainer in the domain (Please put ✓ mark) | <input type="checkbox"/> Excellent <input checked="" type="checkbox"/> Good <input type="checkbox"/> Average <input type="checkbox"/> Poor |
| 3. Content coverage (Please put ✓ mark) | <input type="checkbox"/> Excellent <input checked="" type="checkbox"/> Good <input type="checkbox"/> Average <input type="checkbox"/> Poor |
| 4. Usefulness (Please put ✓ mark) | <input type="checkbox"/> Excellent <input checked="" type="checkbox"/> Good <input type="checkbox"/> Average <input type="checkbox"/> Poor |
| 5. Explanation and Clarity (Please put ✓ mark) | <input type="checkbox"/> Excellent <input checked="" type="checkbox"/> Good <input type="checkbox"/> Average <input type="checkbox"/> Poor |



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DEPARTMENT OF MECHANICAL ENGINEERING

VALUE ADDED COURSE ON MACHINE DRAWING

(16.07.18 to 10.09.18)

FEED BACK FORM

DATE: 11/9/18

| | |
|---------------------|-------------------|
| NAME OF THE STUDENT | Mohamed Thariga G |
| YEAR | 2 nd |
| CONTACT NO./ EMAIL | / |

| | |
|---|---|
| 1. Course objective and scope in the industry (Please put ✓ mark) | <input type="checkbox"/> Excellent <input checked="" type="checkbox"/> Good <input type="checkbox"/> Average <input type="checkbox"/> Poor |
| 2. Knowledge and exposure of the trainer in the domain (Please put ✓ mark) | <input type="checkbox"/> Excellent <input checked="" type="checkbox"/> Good <input type="checkbox"/> Average <input type="checkbox"/> Poor |
| 3. Content coverage (Please put ✓ mark) | <input type="checkbox"/> Excellent <input type="checkbox"/> Good <input checked="" type="checkbox"/> Average <input type="checkbox"/> Poor |
| 4. Usefulness (Please put ✓ mark) | <input checked="" type="checkbox"/> Excellent <input type="checkbox"/> Good <input type="checkbox"/> Average <input type="checkbox"/> Poor |
| 5. Explanation and Clarity (Please put ✓ mark) | <input type="checkbox"/> Excellent <input checked="" type="checkbox"/> Good <input type="checkbox"/> Average <input type="checkbox"/> Poor |



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DEPARTMENT OF MECHANICAL ENGINEERING

VALUE ADDED COURSE ON MACHINE DRAWING

(16.07.18 to 10.09.18)

FEED BACK FORM

DATE: 8.11.18

| | |
|---------------------|----------------------|
| NAME OF THE STUDENT | JEROME |
| YEAR | 2 nd Year |
| CONTACT NO./ EMAIL | / |

| | |
|---|---|
| 1. Course objective and scope in the industry (Please put ✓ mark) | <input type="checkbox"/> Excellent <input checked="" type="checkbox"/> Good <input type="checkbox"/> Average <input type="checkbox"/> Poor |
| 2. Knowledge and exposure of the trainer in the domain (Please put ✓ mark) | <input type="checkbox"/> Excellent <input checked="" type="checkbox"/> Good <input type="checkbox"/> Average <input type="checkbox"/> Poor |
| 3. Content coverage (Please put ✓ mark) | <input checked="" type="checkbox"/> Excellent <input type="checkbox"/> Good <input type="checkbox"/> Average <input type="checkbox"/> Poor |
| 4. Usefulness (Please put ✓ mark) | <input checked="" type="checkbox"/> Excellent <input type="checkbox"/> Good <input type="checkbox"/> Average <input type="checkbox"/> Poor |
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DEPARTMENT OF MECHANICAL ENGINEERING

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(16.07.18 to 10.09.18)

FEED BACK FORM

DATE: 8/11/18

| | |
|---------------------|------------------------------------|
| NAME OF THE STUDENT | K. Kasi Viswanathan |
| YEAR | <u>II</u> nd Year |
| CONTACT NO./ EMAIL | 95004368121 Kasi20171999@gmail.com |

| | |
|---|---|
| 1. Course objective and scope in the industry (Please put ✓ mark) | <input checked="" type="checkbox"/> Excellent <input type="checkbox"/> Good <input type="checkbox"/> Average <input type="checkbox"/> Poor |
| 2. Knowledge and exposure of the trainer in the domain (Please put ✓ mark) | <input type="checkbox"/> Excellent <input checked="" type="checkbox"/> Good <input type="checkbox"/> Average <input type="checkbox"/> Poor |
| 3. Content coverage (Please put ✓ mark) | <input checked="" type="checkbox"/> Excellent <input type="checkbox"/> Good <input type="checkbox"/> Average <input type="checkbox"/> Poor |
| 4. Usefulness (Please put ✓ mark) | <input checked="" type="checkbox"/> Excellent <input type="checkbox"/> Good <input type="checkbox"/> Average <input type="checkbox"/> Poor |
| 5. Explanation and Clarity (Please put ✓ mark) | <input type="checkbox"/> Excellent <input checked="" type="checkbox"/> Good <input type="checkbox"/> Average <input type="checkbox"/> Poor |



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(16.07.18 to 10.09.18)

FEED BACK FORM

DATE: _____

| | |
|---------------------|---|
| NAME OF THE STUDENT | P. Manikandan |
| YEAR | II |
| CONTACT NO./ EMAIL | 85 23 90 78 08 / manikandan 1905p@gmail.com |

| | |
|---|---|
| 1. Course objective and scope in the industry (Please put ✓ mark) | <input checked="" type="checkbox"/> Excellent <input type="checkbox"/> Good <input type="checkbox"/> Average <input type="checkbox"/> Poor |
| 2. Knowledge and exposure of the trainer in the domain (Please put ✓ mark) | <input checked="" type="checkbox"/> Excellent <input type="checkbox"/> Good <input type="checkbox"/> Average <input type="checkbox"/> Poor |
| 3. Content coverage (Please put ✓ mark) | <input checked="" type="checkbox"/> Excellent <input type="checkbox"/> Good <input type="checkbox"/> Average <input type="checkbox"/> Poor |
| 4. Usefulness (Please put ✓ mark) | <input checked="" type="checkbox"/> Excellent <input type="checkbox"/> Good <input type="checkbox"/> Average <input type="checkbox"/> Poor |
| 5. Explanation and Clarity (Please put ✓ mark) | <input checked="" type="checkbox"/> Excellent <input type="checkbox"/> Good <input type="checkbox"/> Average <input type="checkbox"/> Poor |



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(16.07.18 to 10.09.18)

FEED BACK FORM

DATE: _____

| | |
|---------------------|-------------------|
| NAME OF THE STUDENT | PARAMESHWARAN. M |
| YEAR | III II |
| CONTACT NO./ EMAIL | 9092198697 / |

| | |
|---|---|
| 1. Course objective and scope in the industry (Please put ✓ mark) | <input type="checkbox"/> Excellent <input checked="" type="checkbox"/> Good <input type="checkbox"/> Average <input type="checkbox"/> Poor |
| 2. Knowledge and exposure of the trainer in the domain (Please put ✓ mark) | <input type="checkbox"/> Excellent <input checked="" type="checkbox"/> Good <input type="checkbox"/> Average <input type="checkbox"/> Poor |
| 3. Content coverage (Please put ✓ mark) | <input type="checkbox"/> Excellent <input checked="" type="checkbox"/> Good <input type="checkbox"/> Average <input type="checkbox"/> Poor |
| 4. Usefulness (Please put ✓ mark) | <input type="checkbox"/> Excellent <input checked="" type="checkbox"/> Good <input type="checkbox"/> Average <input type="checkbox"/> Poor |
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(16.07.18 to 10.09.18)

FEED BACK FORM

DATE: 8-11-18

| | |
|---------------------|--|
| NAME OF THE STUDENT | <u>M. PARAMESHWARAN</u> |
| YEAR | <u>IInd YEAR</u> |
| CONTACT NO./ EMAIL | <u>8838088751 www.parameshwaran987@gmail.com</u> |

| | |
|---|---|
| 1. Course objective and scope in the industry (Please put ✓ mark) | <input type="checkbox"/> Excellent <input checked="" type="checkbox"/> Good <input type="checkbox"/> Average <input type="checkbox"/> Poor |
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DEPARTMENT OF MECHANICAL ENGINEERING

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(16.07.18 to 10.09.18)

FEED BACK FORM

DATE: 08/11/2018

| | |
|---------------------|---------------------------|
| NAME OF THE STUDENT | B. PANDIYARAJ |
| YEAR | II |
| CONTACT NO./ EMAIL | 6381042602 / bapandiyaraj |

| | |
|---|---|
| 1. Course objective and scope in the industry (Please put ✓ mark) | <input type="checkbox"/> Excellent <input checked="" type="checkbox"/> Good <input type="checkbox"/> Average <input type="checkbox"/> Poor |
| 2. Knowledge and exposure of the trainer in the domain (Please put ✓ mark) | <input checked="" type="checkbox"/> Excellent <input type="checkbox"/> Good <input type="checkbox"/> Average <input type="checkbox"/> Poor |
| 3. Content coverage (Please put ✓ mark) | <input checked="" type="checkbox"/> Excellent <input type="checkbox"/> Good <input type="checkbox"/> Average <input type="checkbox"/> Poor |
| 4. Usefulness (Please put ✓ mark) | <input checked="" type="checkbox"/> Excellent <input type="checkbox"/> Good <input type="checkbox"/> Average <input type="checkbox"/> Poor |
| 5. Explanation and Clarity (Please put ✓ mark) | <input checked="" type="checkbox"/> Excellent <input type="checkbox"/> Good <input type="checkbox"/> Average <input type="checkbox"/> Poor |



SSM Institute of Engineering and Technology

(Approved by AICTE, New Delhi / Affiliated to Anna University, Chennai)

Dindigul – Palani Highway, Dindigul – 624 002

DEPARTMENT OF MECHANICAL ENGINEERING



CERTIFICATE OF COMPLETION



This is to certify that *Ms.GRACE.A(922117114030)* of has successfully completed the value added course on “*MACHINE DRAWING*” organized by the Department of Mechanical Engineering, SSM Institute of Engineering and Technology, Dindigul from 16.07.2018 to 10.09.2018.

Event Coordinator

Hod/Mech.Engg

Principal



SSM Institute of Engineering and Technology

(Approved by AICTE, New Delhi / Affiliated to Anna University, Chennai)

Dindigul – Palani Highway, Dindigul – 624 002

DEPARTMENT OF MECHANICAL ENGINEERING



CERTIFICATE OF COMPLETION



This is to certify that *Mr.NITHIS.C(922117114075)* of has successfully completed the value added course on “*MACHINE DRAWING*” organized by the Department of Mechanical Engineering, SSM Institute of Engineering and Technology, Dindigul from 16.07.2018 to 10.09.2018

Event Coordinator

Hod/Mech.Engg

Principal



SSM Institute of Engineering and Technology

(Approved by AICTE, New Delhi / Affiliated to Anna University, Chennai)

Dindigul – Palani Highway, Dindigul – 624 002

DEPARTMENT OF MECHANICAL ENGINEERING



CERTIFICATE OF COMPLETION



This is to certify that **Mr.JEROME.F (922117114044)** of has successfully completed the value added course on “**MACHINE DRAWING**” organized by the Department of Mechanical Engineering, SSM Institute of Engineering and Technology, Dindigul from 16.07.2018 to 10.09.2018

Event Coordinator

Hod/Mech.Engg

Principal