

MVM - Technical Drawing

T094

Thursday, 07/11/2013

8:30 – 11:30 AM

WORKFORCE DEVELOPMENT AUTHORITY



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**ADVANCED LEVEL NATIONAL EXAMINATIONS, 2013,
TECHNICAL AND PROFESSIONAL TRADES**

EXAM TITLE: Technical Drawing - MVM

OPTION: Motor Vehicle Mechanics (MVM)

DURATION: 3hours

INSTRUCTIONS:

The paper contains **Three (3)** Sections:

Section **I:** Sixteen **(16)** questions, **all Compulsory;** **55marks**

Section **II:** Five **(5)** questions, Choose any **Three (3);** **30marks**

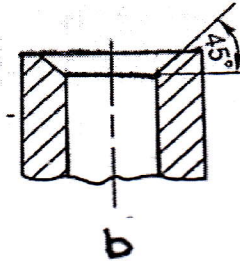
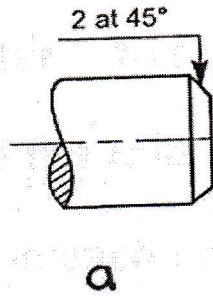
Section **III:** Three **(3)** questions, Choose any **One (1);** **15marks**

Materials: pencil / pen / rubber /lath / pair of compasses /square

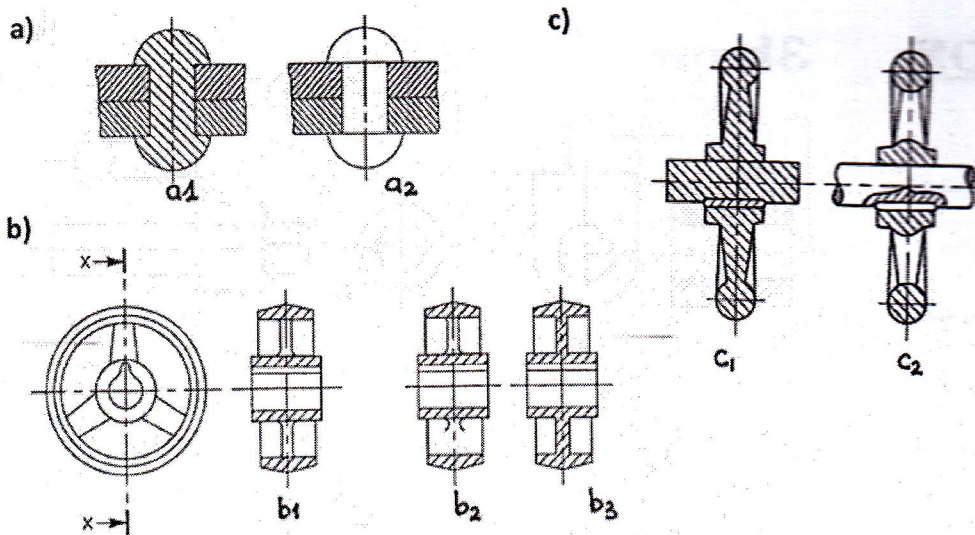
Section I: Answer all the 16 questions.

55marks

- 01. Explain the meaning of the following notes: **DIA 30 DEEP 25.** **2marks**
- 02. What is an assembly drawing? **2marks**
- 03. Classify the various types of drawings used in mechanical engineering field. **4marks**
- 04. The followings drawing are not dimensioned properly (-chamfer & counter sunk).
Correct them according to standards by two methods for each one. **4marks**



- 05. Sketch the following types of lines: **a) Centre line b) cutting plane line.** **2marks**
- 06. Indicate the correct and incorrect methods of sectioning of machine elements represented in following figures: **3marks**



- 07. Explain the meaning of the following abbreviations:
 - a) CYL
 - b) DIA and Ø
 - c) TOL
 - d) PCD**4marks**
- 08. Indicate roughness grade symbols for the following roughness grade numbers:
 - a) N12
 - b) N6
 - c) N2
 - d) N8**4marks**
- 09. Describe the drawing sheet designations and their sizes (first choice) as per ISO-A series. **5marks**

10. What do you understand by: **a)** scale 5:1;

b) scale 1:10;

c) scale 1:1?

3marks

11. How are leader lines terminated? Give an example for each one.

6marks

12. Give the shape identification symbols for the following:

a) Diameter **b)** radius **c)** square **d)** spherical radius

4marks

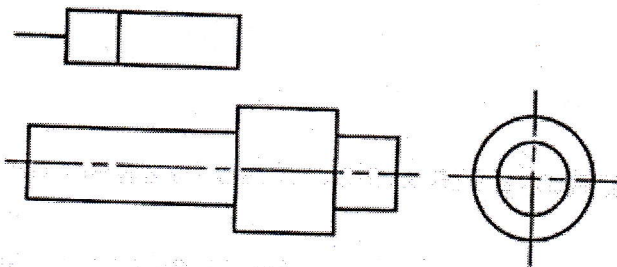
13. Complete the tolerance frames in this figure to satisfy the conditions required in each case:

a) The axis of the whole component is required to be contained in a cylindrical zone of 0.04mm diameter

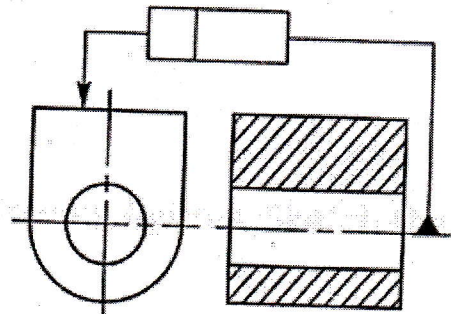
b) The top surface has to be parallel to the hole, within a tolerance of 0.08mm

5marks

a)



b)



14. Name the geometrical characteristics of a surface roughness.

3marks

15. What are two methods of dimensioning?

2marks

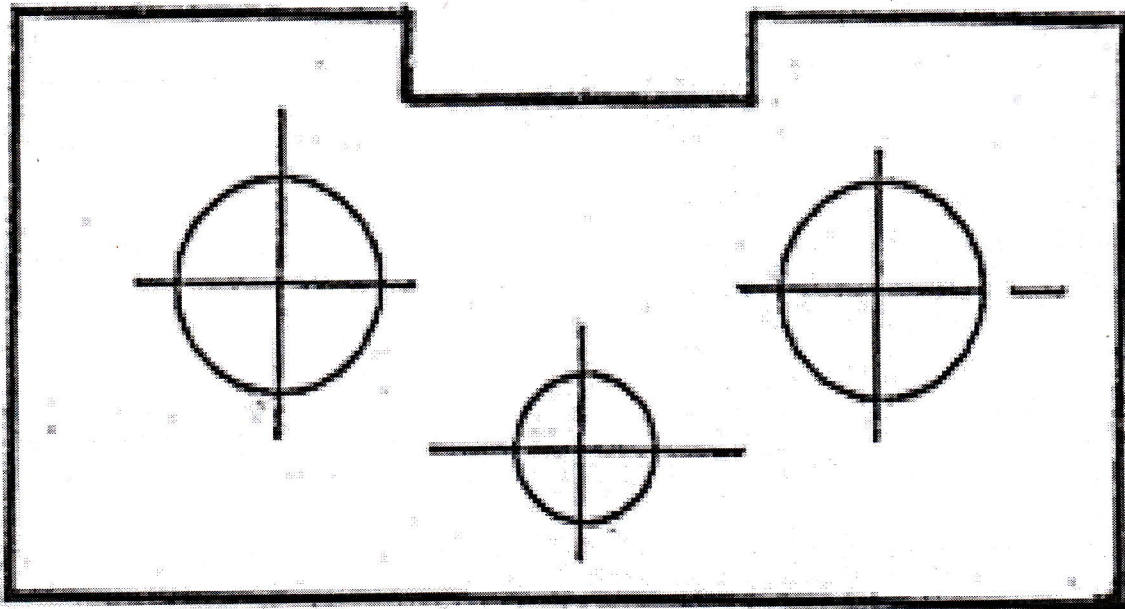
16. Name two systems of projection.

2marks

Section II: Answer three(3) questions of your choice.

30marks

17. A regular hexagonal prism with side of base 20mm and axis 30mm long is resting on its base on H.P such that one of its rectangular faces is parallel to VP and 10mm away from it. Draw the projections of prism. **10marks**
18. A T-pipe connection consists of a vertical cylinder of diameter 32mm and a horizontal cylinder of the same size. The axes of the cylinders meet at right angles. Draw the curves of intersection. **10marks**
19. Identify the size and location dimensions in this drawing. **10marks**



20. Two views of each object are given in following figures. Sketch the missing Views.

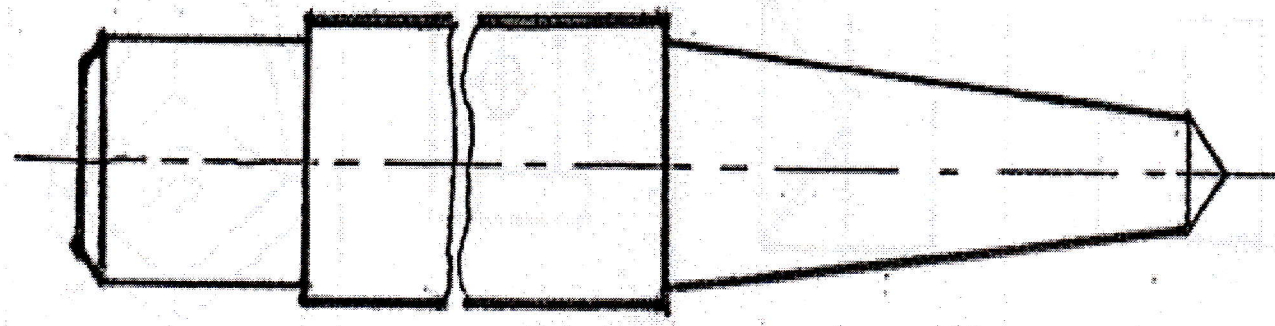
10marks

	VFF	VFA	VFS		VFF	VFA	VFS
1				6			
2				7			
3				8			
4				9			
5				10			

VFF – View from the front VFA – View from above VFS – View from the side (L or R)

21. Identify the size and location dimensions for the next figure.

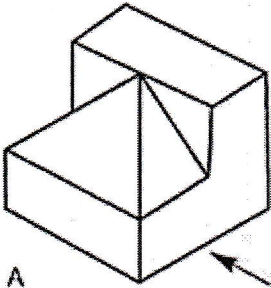
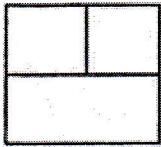
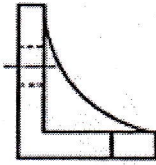
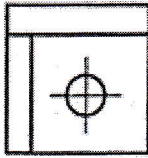
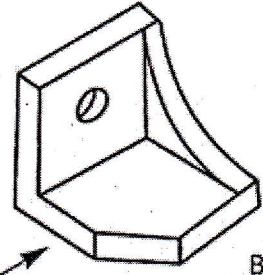
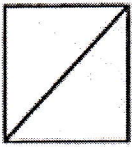
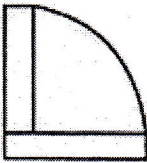
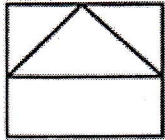
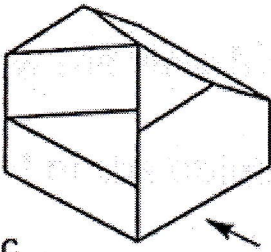
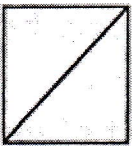
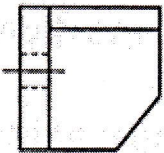
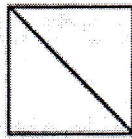
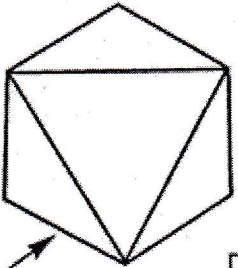
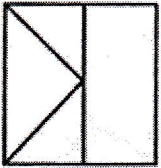
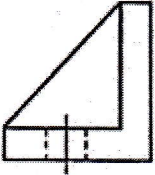
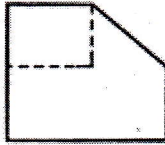
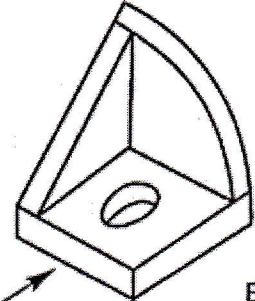
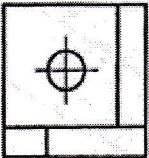
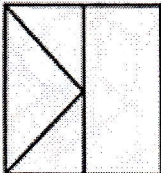
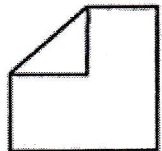
10marks



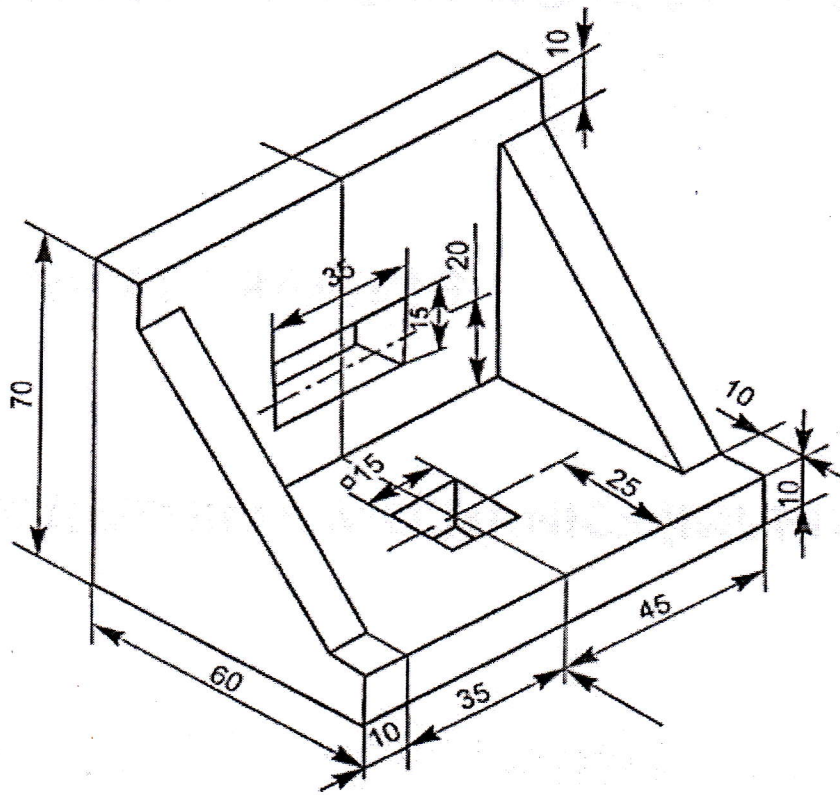
Section III: Answer only one question of your choice.

15marks

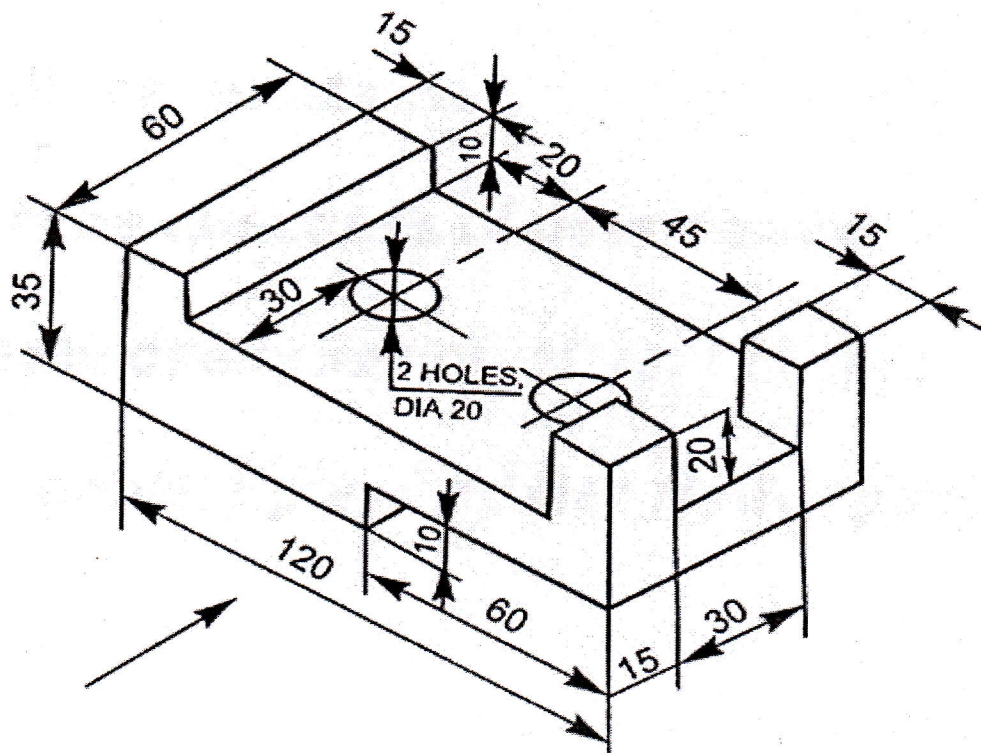
22. Isometric views of a few objects are given on the left hand side of the following figures. The orthographic views are shown on the right side. Name the views. **15marks**

 <p>A</p>	 <p>1</p>	 <p>2</p>	 <p>3</p>
 <p>B</p>	 <p>4</p>	 <p>5</p>	 <p>6</p>
 <p>C</p>	 <p>7</p>	 <p>8</p>	 <p>9</p>
 <p>D</p>	 <p>10</p>	 <p>11</p>	 <p>12</p>
 <p>E</p>	 <p>13</p>	 <p>14</p>	 <p>15</p>

23. Draw the view from the front, the view from above and the view from the left of the object shown in the following isometric projection. **15marks**



24. Draw the view from the front, the view from above and the view from the right of the object shown in the following isometric projection. **15marks**



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