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Figure A

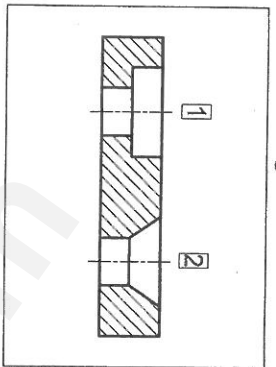


Figure B

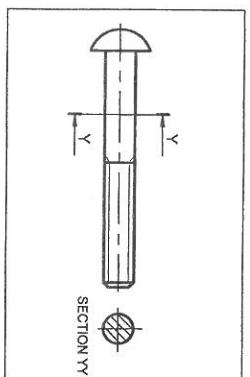


Figure C

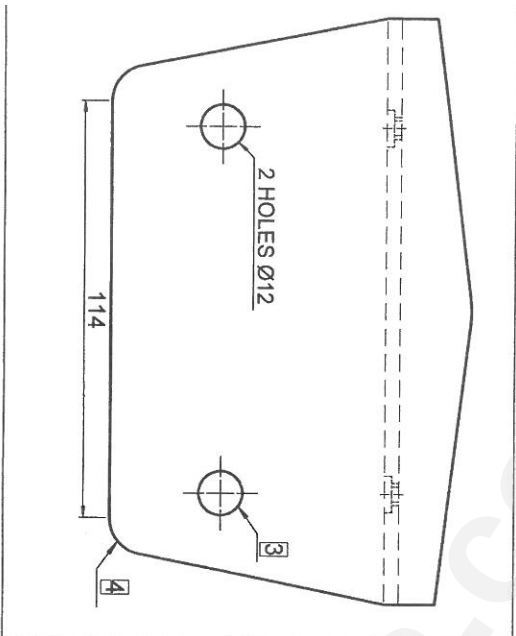


Figure D

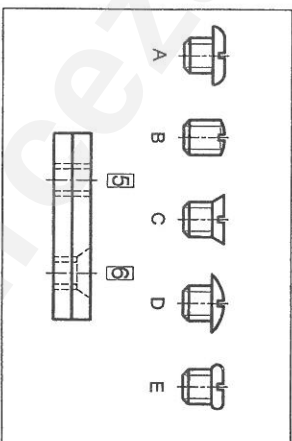


Figure F

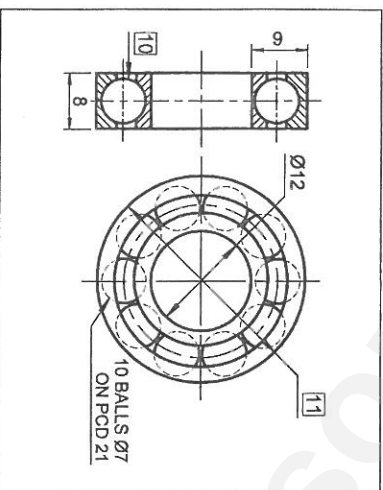


Figure E

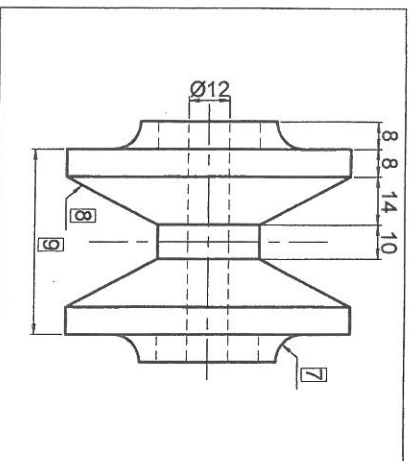


Figure G

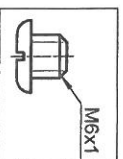
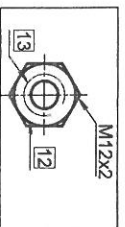


Figure H



Answer the following questions neatly and legibly in the space provided:

- 1.1 Name the type of hole shown at 1 in Figure A.
- 1.2 Name the type of hole shown at 2 in Figure A.
- 1.3 What type of sectioning is shown in Figure B?
- 1.4 Calculate the radius 3 in Figure C.
- 1.5 What is feature 4 in Figure C called?
- 1.6 Which screw in Figure D would fit completely into hole 5 and produce a near flush top surface?
- 1.7 Which screw in Figure D would fit completely into hole 6 and produce a near flush top surface?
- 1.8 What is feature 7 in Figure E called?
- 1.9 What is feature 8 in Figure E called?
- 1.10 Calculate the dimension 9 in Figure E.
- 1.11 Calculate the diameter 10 of the ball in Figure F.
- 1.12 Calculate the diameter 11 in Figure F.
- 1.13 What is the thickness of the thread in Figure G?
- 1.14 Is the thread in Figure G external or internal?
- 1.15 Calculate the diameter 12 of the circle in Figure H.
- 1.16 Calculate the diameter 13 of the circle in Figure H.
- 1.17 The *machining symbol* in Figure I shows the following information:
Select and circle the correct option.

Option	Machine allowance	Roughness value	Direction of lay	Finish
A	0.2	0.5	Circular	Plating
B	0.5	0.2	=	Plating
C	0.2	0.5	Parallel	Plating
D	=	0.2	Perpendicular	Plating

- 1.18 The *welding symbol* in Figure J shows the following information:
Select and circle the correct option.

Option	Weld type	Site weld	Weld all around	Process
A	Bead	No	Yes	Flame
B	Fillet	Yes	No	Arc
C	Bevel	No	No	Flame
D	Fillet	Yes	Yes	Arc

Figure I

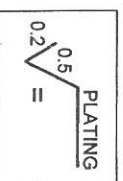
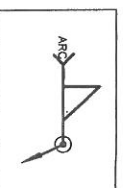


Figure J

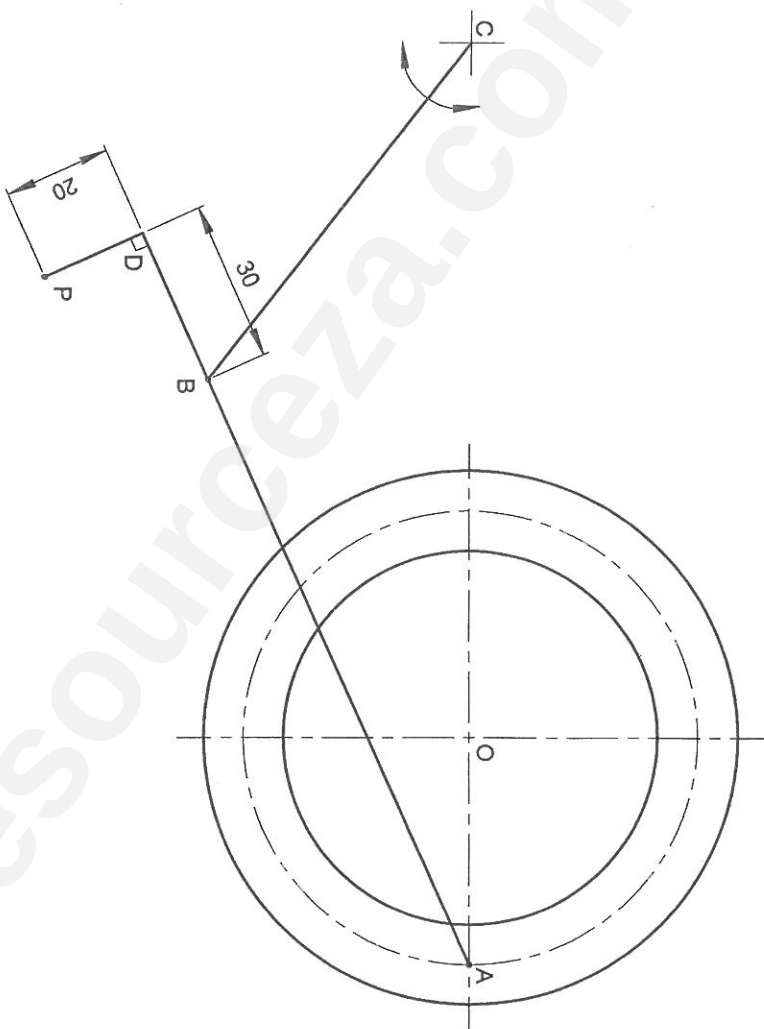


EXAMINATION NUMBER

20 MARKS

The given figure shows a wheel, rotating around the centre O , with a *rod AD* attached to it at point *Rod BC* is pin-jointed at point B and free to move about its anchor point C. *Rods AD* and *DP* are fix at 90° . *Rod BC* rocks back and forth as the wheel *Construct* and draw the locus of *point P* if the direction of rotation is *clockwise*.

Show all **constructions** and indicate the **direction** correctly.



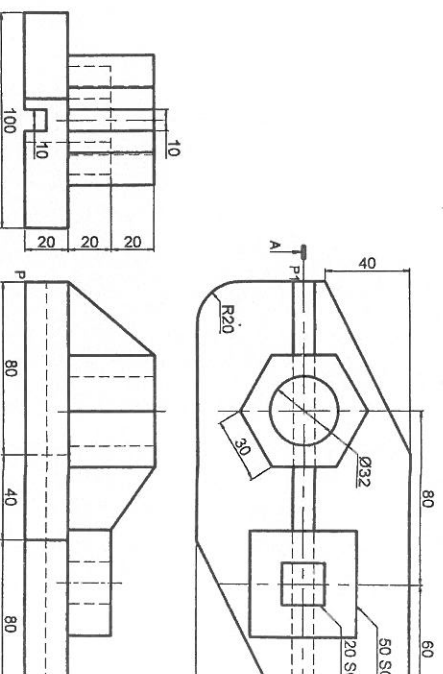
SET	PTS	DIR	LOC
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EXAMINATION NUMBER

ANSWER SHEET 2.2

QUEST	ISOME DRAW
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- 3.1 Draw a neat **Sectioned Isometric** on the cutting plane A-A.
- 3.2 Show the construction for the hexagon.
- 3.3 Draw the centre lines for the circle.
- 3.4 Make point P the lowest part of your draw
- 3.5 Start your drawing on the given crosshair



ASSESSMENT CRITERIA	
☒ Construction	2
☒ Iso points 44/2	22
☒ Iso circles	4
☒ Centre lines	3
☒ Hatching	5
☒ Non-hatching	2
☒ Positioning	2

CON	ISO	CIR	CLS	HAT	NON	POS
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PART A

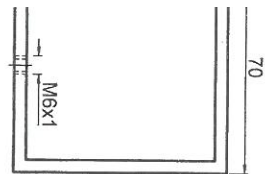
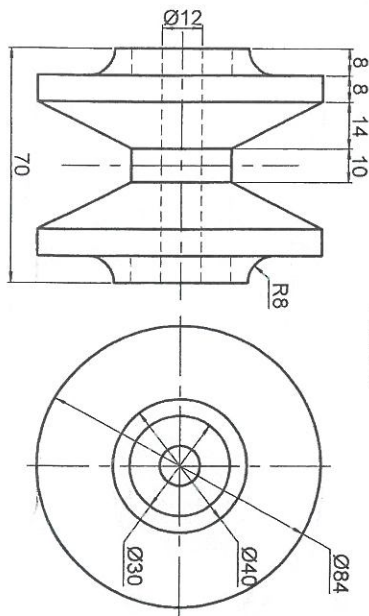
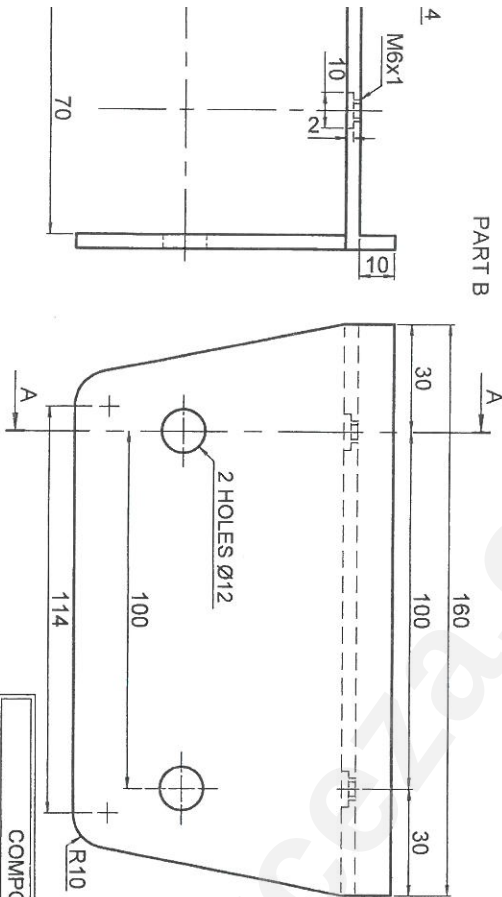
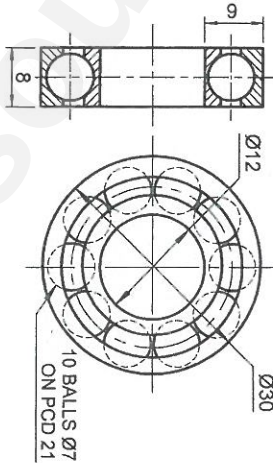


FIGURE 1

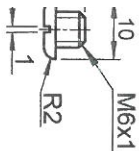
PART G



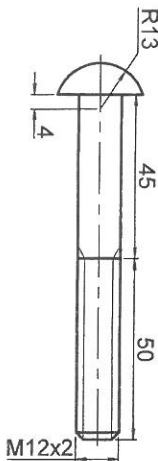
PART H



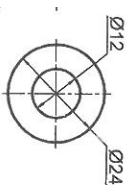
ART C



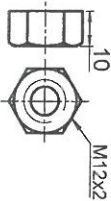
PART D



ART E



PART F



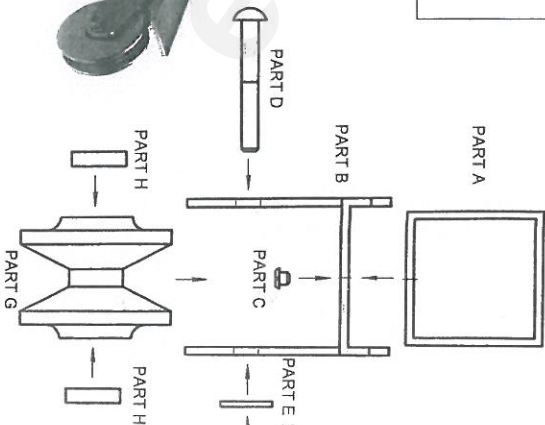
COMPONENT LIST			
NO.	PART	QUANTITY	MATERIAL
A	GATE FRAME	1	MILD STEEL
B	CRADLE	1	MILD STEEL
C	M6 SCREW	2	MILD STEEL
D	M12 BOLT	2	MILD STEEL
E	WASHER	2	MILD STEEL
F	M12 NUT	2	MILD STEEL
G	WHEEL	2	MILD STEEL
H	BEARING	4	STEEL

FIGURE 2



- Figure 2 shows a series of pictures of a sliding GATE WHEEL assembly, as well as an exploded view of how the components of a simplified system are assembled. A list of components is also shown.
- Figure 1 shows the different components (not drawn to scale) that need to be assembled. Complete the following on answer sheet 4 to a SCALE of 1:1.
- 4.1 A full sectional **Front View** of the assembled components on the cutting plane A-A.
- 4.2 A **Right View** of the assembled components on the given centre lines.
- 4.3 Please note the following:
- Show 3 faces for the hexagonal nut on the front view.
- 4.4 Show **hidden detail** on the **right view** of only the Gate Frame (Part A) without the h for the screws, and on only ONE of the two Wheels (Part G).
- 4.5 Draw the **cutting plane** and the **centre line**
- 4.6 Draw 3 functional **dimensions**.
- 4.7 Draw the projection **symbol** in the space provided.
- 4.8 Print the **title** and **scale** in the space provided.
- 4.9 Label the **sectioned view**.

FRONT VIEW



100 MARKS

EXAMINATION NUMBER

QUESTIO
MECHANIC
ASSEMBL

ASSESSMENT CRITE

FRONT VIEW	
A GATE FRAME $\frac{8}{12}$	4
B CRADLE $\frac{12}{12}$	6
C M6 SCREW	4
D M12 BOLT $\frac{12}{12}$	6
E WASHER	2
F M12 NUT	5
G WHEEL $\frac{18}{12}$	9
H BEARINGS	8
TOTAL	44

RIGHT VIEW	
A GATE FRAME	5
B CRADLE $\frac{10}{12}$	5
E WASHER	2
D/F M12 NUT/BOLT	8
G WHEEL	2
HIDDEN DETAIL	6
TOTAL	28

ADDITIONA	
CORRECT ASS. $\frac{8}{12}$	4
HATCHING $\frac{14}{12}$	7
NON-HATCHING	3
CENTRE LINES	3
DIMENSIONS	3
CUTTING PLANE	2
SYMBOL	2
TITLE/SCALE	2
LABEL	2
TOTAL	28
TOTAL	100

TITLE	
SCALE	

SYMBOL	
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ANSWER SHEET 4

100 MARKS

EXAMINATION NUMBER																			
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