Hillcrest High School

ENGINEERING, GRAPHICS & DESIGN

GRADE 10
2017
PAPER 2
MARKS : 105 **TIME : 2 HOURS**

INSTRUCTIONS TO CANDIDATES	
1.	This question paper consists **of 4 pages** including the cover page and **3 questions.**
2.	**All** questions must be answered.
3.	Unless specified otherwise, all questions are in **Third Angle Orthographic Projection.**
4.	Unless specified otherwise, all questions are to be completed to a **scale of 1:1**
5.	All answers must be re-stapled in numerical order, even questions that are not attempted/blank.
6.	All **construction work** must be shown, even if a stencil was used.
7.	Print your **NAME** neatly on each page.
8.	Use only the **drawing sheets** provided.
9.	Your drawings should reflect **neatness** and **accuracy**.
10.	All dimensions or details not given may be **assumed** in **good proportion.**

QUESTION	SECTION	MARK	MODERATE	MAXIMUM
1	TANGENTS			25
2	ISOMETRIC DRAWING			35
3	MECHANICAL CASTING – sectioned viewS			45
TOTAL				105
SYMBOL				100

NAME

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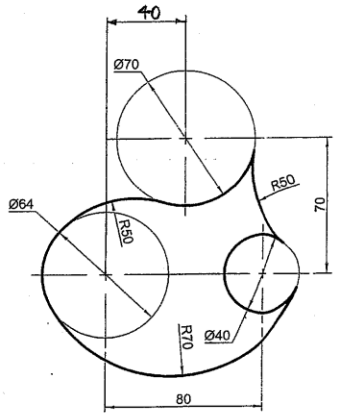
QUESTION 1
25 MARKS

TANGENTS

The figure below shows a SHOE HORN.
Draw the SHOE HORN, using tangents and blending of arcs drawing techniques.

- Show all construction and calculation.
- Show all points of contact and arc centres.
- Do not show any centre lines.

ASSESSMENT CRITERIA *You will be assessed on your ability to do the following:*	
• draw the arc centres	6
• draw the points of contact	6
• draw the arcs	6
• show all construction	9
• show all calculation	3



SHOW YOUR CALCULATION HERE

NAME

ANSWER SHEET 1

QUESTION 2
35 MARKS

ISOMETRIC

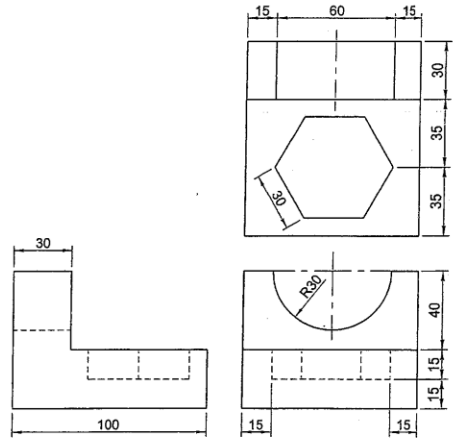
The figure below shows the front view, top view and left view of a CASTING, drawn in third angle orthographic projection.
Draw a neat isometric projection drawing of the CASTING.

- show all construction
- position your drawing correctly

ASSESSMENT CRITERIA

You will be assessed on your ability to do the following:

• draw the isometric	25
• draw the construction for the hexagon	2
• draw the isometric circle arcs	3
• draw the centre lines	2
• draw the isometric in the correct position	3



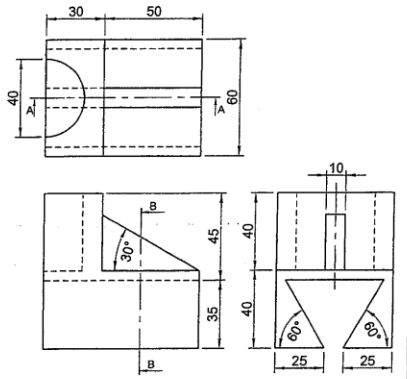
NAME

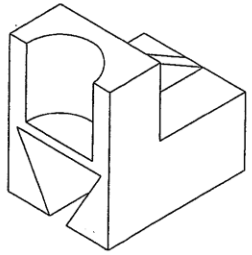
ANSWER SHEET 2

QUESTION 3
45 MARKS

MECHANICAL CASTING

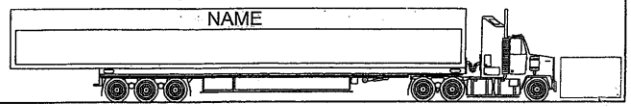
The figure shows the front view, top view and right view of a CASTING drawn in third angle orthographic projection. The isometric projection is also given.
Draw the following in the space provided:
3.1. the **OUTSIDE TOP VIEW** (show all hidden detail in this view only);
3.2. the **SECTIONAL FRONT VIEW** as seen from the cutting plane A-A;
3.3. the **SECTIONAL RIGHT VIEW** as seen from the cutting plane B-B.
3.4. Do not show any hidden detail in the sectioned views.
3.5. Draw the cutting planes.
3.6. Space your views correctly and appropriately.
3.7. Label the sectioned views only!





ASSESSMENT CRITERIA			
TOP VIEW			
1	AREAS	8	
2	CUTTING PLANE	2	
3	HIDDEN DETAIL	4	
SECTIONED FRONT VIEW			
4	AREAS OF SECTION	3	
5	NO SECTION AREAS	6	
6	CUTTING PLANE	2	
SECTIONED RIGHT VIEW			
7	AREAS OF SECTION	4	
8	AREAS OF NO SECTION	7	
9	CENTRE LINE	2	
GENERAL			
10	LABELS	2	
11	60° LEFT VIEW TAPER	2	
12	30° FRONT VIEW RIB	1	
13	POSITION VIEWS	2	
TOTAL		45	

NAME



ANSWER SHEET 3