

Design and Technology (608/1/2/3) Preamble

The Examinations Council of Zambia has introduced an assessment of Design and Technology at Grade 9 level so as to be in line with the new Design and Technology Junior Secondary School Syllabus of 2013 developed by Curriculum Development Centre (CDC) of the Ministry of Education, Science, Vocational Training and Early Education (MESVTEE).

The purpose of the specimen papers is to guide the teachers and would be candidates on the nature and content of the Grade 9 Design and Technology examination which will begin to be administered in 2015 examination session.

Assessment Aims and Objectives

Design and Technology encourages learners to identify needs, design and produce solutions. The examination tests will cover the following areas as stipulated in the Zambian Junior Secondary School Design and Technology syllabus of 2013. These include;

1. Knowledge with understanding
2. Design problem solving
3. Design Communication and Realisation

Test Design

The Grade 9 examination will consist of three papers; Design and Technology paper 1-**608/1** (Graphic Communication) Design and Technology paper 2-**608/2** (Theory) and Design & Technology paper 3-**(608/3)** (Formative - Coursework/Project). The number of questions and mark weighting is summarised below;

COMPONENT	PAPER TYPE	NO. OF QUESTIONS	WEIGHTING OF MARKS	TIME ALLOWANCE
608/1	Graphic Communication (Drawing)	03	19%	1 ½ hour
608/2	Objective Questions	30	34%	2 ½ hours
	Structured Questions	30		
	Short essays	02		
608/3	Formative - Coursework/ Project	01	47%	Jan.-Sep. each year

The aim of Design and Technology paper three (608/3) is to test the candidate's ability to carry out a prolonged compilation (portfolio) and a gradual development of a product (artefact). Advance information and a **Situation** will be sent to schools a year earlier before a particular examination year for some general guidelines.



EXAMINATIONS COUNCIL OF ZAMBIA

JUNIOR SECONDARY SCHOOL LEAVING EXAMINATION (GRADE 9) - 2014

DESIGN AND TECHNOLOGY 608/1

PAPER 1 (SPECIMEN)

(INTERNAL AND EXTERNAL CANDIDATES)

TIME: 1 hour 40 minutes

MARKS: 100

Reading Time: 10 minutes

Working Time: 1 hour 30 minutes

INSTRUCTIONS TO CANDIDATES

- 1 Pull out the Drawing Answer Sheet from the question paper.
- 2 Draw the borderline and Title Block.
- 3 Print your Name, Examination Number, School/Centre Name and Code on the Title Block.

NOTE: The Drawing Answer Sheet should be properly titled/printed.

- 4 All your answers should be on the Drawing Answer Sheet provided and must be numbered.
- 5 There are **two** sections in this question paper, **Section A** and **Section B**.
- 6 Question 1 from section A is compulsory and you are required to answer two questions from section B.
- 7 Answer question 1 on one side of the Answer Sheet and those from Section B on the other side.
- 8 There are two printings of the orthographic drawing questions; one in **FIRST ANGLE PROJECTION** and the other in **THIRD ANGLE PROJECTION**. The Home Subject Teacher should instruct the candidates which projection should be used.
- 9 All dimensions are in millimetres unless stated otherwise.
- 10 Question 1 carries 25 marks and Section B questions carry 15 marks each.

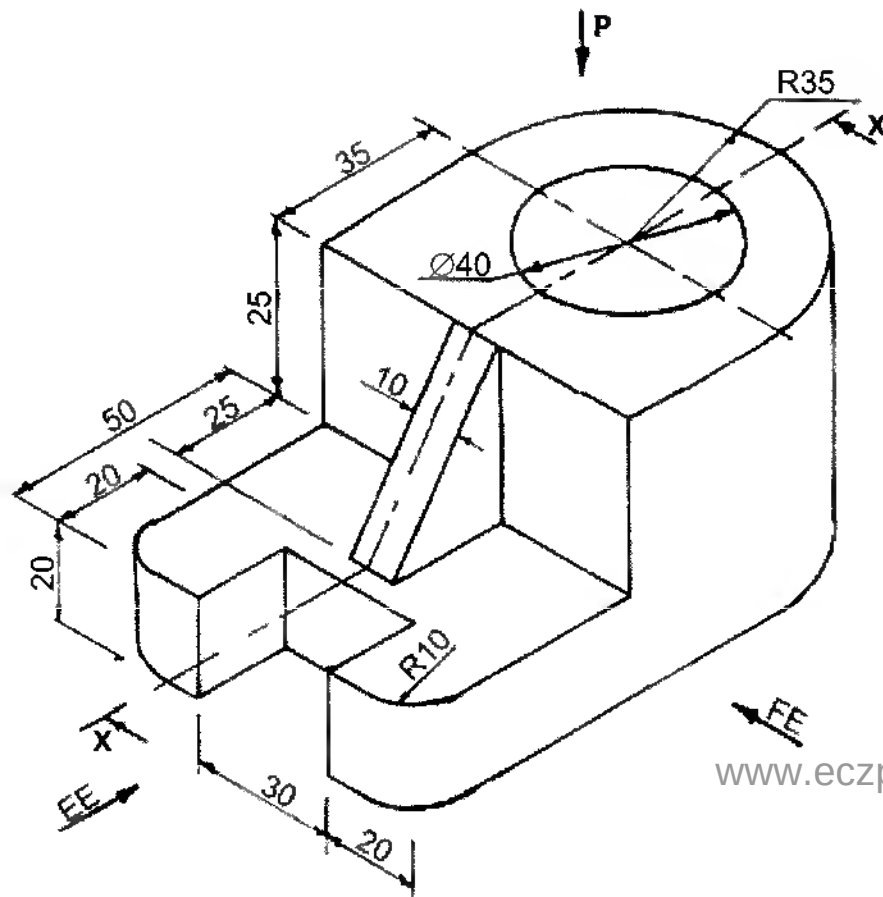
INFORMATION FOR CANDIDATES

Cell phones are not allowed in the Examination room.

DO NOT TURN THIS PAGE UNTIL YOU ARE TOLD TO DO SO.

Section A
Compulsory question

1



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Figure 1

Figure 1 shows an isometric view of a SHAFF SUPPORT.

DO NOT copy this view but draw in either FIRST ANGLE or THIRD ANGLE PROJECTION the following views.

- (a) A sectional elevation looking the direction of arrow **FE**. The direction of the section being indicated by **X – X**.
- (b) An end elevation looking in the direction of arrow **EE**.
- (c) The plan as seen from arrow **P**. Show **six** important dimensions.

SECTION B

Answer one question from plane Geometry and one question from solid Geometry.

PLANE GEOMETRY

- 2 (a) Draw a triangle given the perimeter of 175mm and the side ratios of 3:5:6
 (b) Draw a circumscribed circle to the triangle.
 (c) Measure and state the diameter of the circle.
- 3 **Figure 3** shows a triangle attached to a semi ellipse.
 $AC = 80\text{mm}$, $AB = 45\text{mm}$, Angle $ABC = 90^\circ$ and $OD = 60\text{mm}$

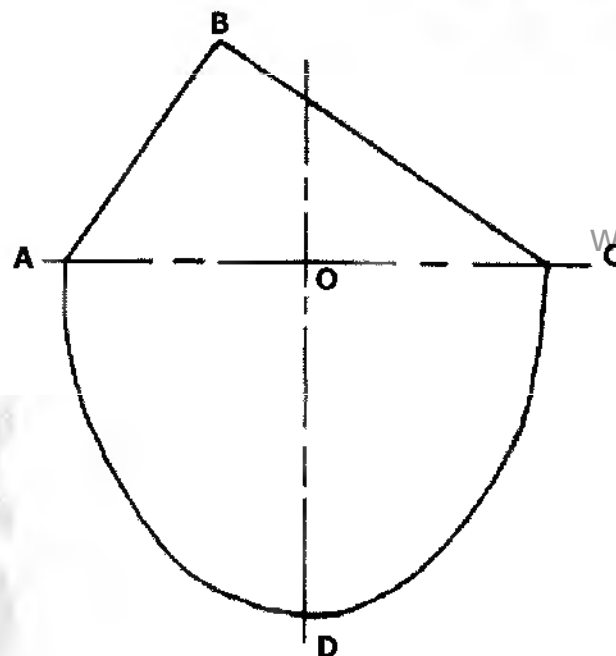


Figure 3

SOLID GEOMETRY

4 (a)

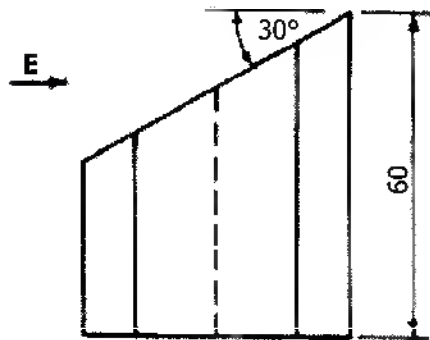


Figure 4 (a) shows a truncated pentagonal prism in first angle projection.

Copy the figure in full size showing clearly all the geometrical constructions.

- (a) Draw the given views.
- (b) Project an end elevation viewed from the direction of arrow **E**.

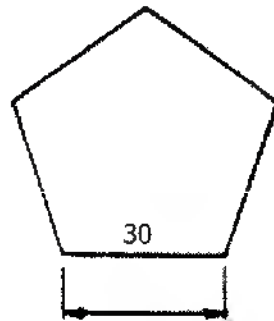


Figure 4 (a)

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4 (b)

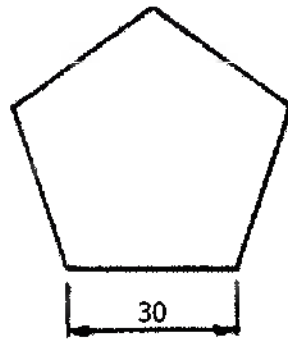


Figure 4 (b) shows a truncated pentagonal prism in Third Angle projection.

(a) Draw the given views.

(b) Project an end elevation viewed from the direction of arrow **E**

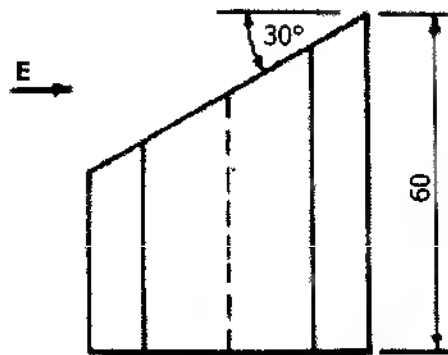


Figure 4 (b)

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- 5 (a)** Two views of a shape block are shown in **Figure 5 (a)** in First Angle Projection.

Do not copy the views, but draw an isometric view of the block with corner **P** as the lowest point.

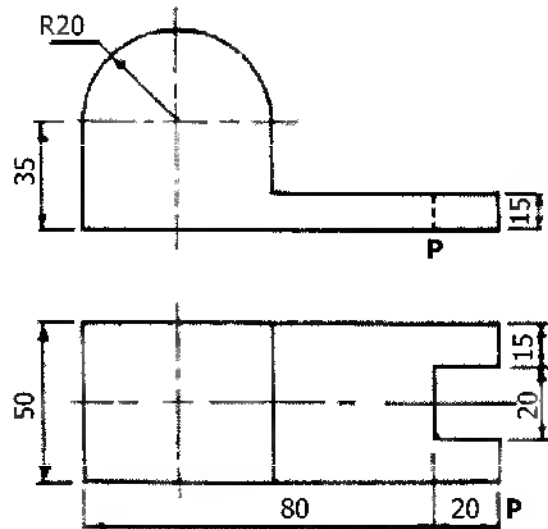


Figure 5 (a)

- 5 (b)** Two views of a shaped block are shown in **Figure 4** in Third angle projection. DO NOT copy the views, but draw an isometric view of the block with corner **P** as the lowest point.

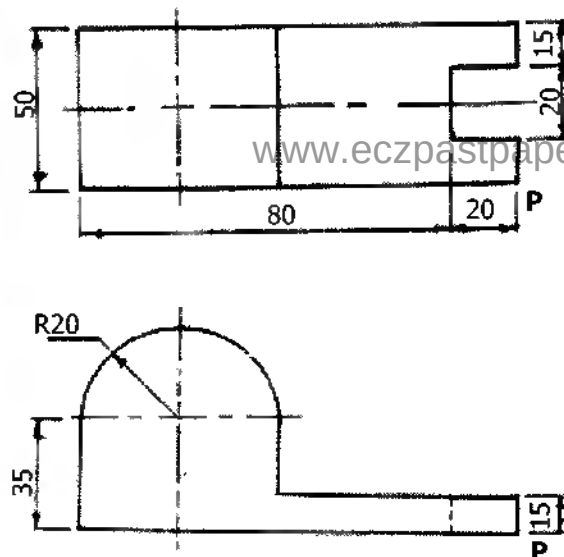


Figure 5 (b)