Name: .Index No: $\qquad$ .Adm.No: $\qquad$

Class $\qquad$ Candidate'ssignature: $\qquad$ Date: $\qquad$
449/1
DRAWING AND DESIGN
TIME: $2^{1 ⁄ 2}$ hours

## KAMDARA JET - 2016

## Instructions to candidates

a) You should have following for this examination:

Answer sheet;
Drawing instruments;
3 sheets of drawing paper size A3;
Scale rule.
b) This paper consists of three sections: $\boldsymbol{A}, \boldsymbol{B}$ and $\boldsymbol{C}$.
c) Answer all questions in section $\boldsymbol{A}$ and $\boldsymbol{B}$ and any othé $\mathbf{t w o}$ questions from section $C$.
d) Questions in section $\mathbf{A}$ must be answered on the answer sheet provided.
e) Questions in section $\boldsymbol{B}$ and $\boldsymbol{C}$ should be answered on the A3 sheets of drawing paper provided.
f) All dimensions are in millimeters unless otherwise stated.
g) Candidates may be penalized for not following the instructions given in this paper.
h) This paper consists of 7 printed pages.
i) Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.
j) Candidates should answerthe questions in English.

Answer all questions in this section on the answer sheets provided

1. (a) Briefly explain the main duties of the following occupations that a directly connected with the learning of Drawing and Design:
(3 marks)
i. A draughtsman
ii. A designer.
(b) Name any four levels of institutions of learning where learners can acquire technical education and skills in Kenya
2. State the main reason why two point perspective drawing s are mostly drawn using angles of $45^{\circ}$ or $60^{\circ} \& 30^{\circ}$.
(1 mark)
3. (a) Give any three reasons that would be considered for one to choose agood Computer Aided Design program.
(b) Name any four types of Computer Aided design programs
4. Using neat sketches show the convention used to indicate the following: (4 marks)
(a) Internal threading
(b) First angle projection
(c) Centre line
(d) Diameter in drawings
5. (a) State the main objectives of drawing and design.
(2 marks)
(b)Differentiate between oblique cabinet and oblique cavalier.
(2 Marks)
6. Using the three orthographic views of an object given, draw a two point perspective drawing of the object in aerial view

7. Using the concentric circle method construct an ellipse with a major axis of 75 mm and minor axis of 40 mm .
8. Using the isometric view given, draw in good proportion, the orthographic views in $3^{\text {rd }}$ angle projection.

9. The view given below show the front elevation of a regular pentagonal pyramid of base side 25 mm , cut through two cutting plane $X-Y$ and $Y-Z$. Draw the true shape of plane $Y-Z$.
(7 marks)


## Turn over

10. The view shown represents a hexagonal prism interpenetrated by a square prism. Draw the line of intersection and the development of the hexagonal prism

11. Use the two orthographic views to draw an isometric view of the object to a scale of 1:1

12. Construct a diagonal scale in which 3 mm represent 5 mm and use it to construct the quadrilateral shown below.

13. Using the isometric drawing of the object given, draw the orthographic views of the object in $3^{\text {rd }}$ angle projection.


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