SMARTWIZ

GRADE11 Engineering Graphic Designing (EGD) EXAM

MARKS: 100

MARKS	

TIME: 2 HOURS

SCHOOL _____

CLASS (eg. 4A) _____

SURNAME _____

NAME _____

Instructions for Learners:

- Read all instructions carefully before you begin the exam.
- Write your full name and student number clearly on the answer sheet/book.
- Answer all questions unless otherwise instructed.
- Show all your work/calculations where necessary.
- Write neatly and clearly.
- Use only a blue or black pen. Do not use correction fluid or tape.
- Electronic devices (calculators, cell phones, etc.) are not allowed unless explicitly permitted.
- Raise your hand if you have any questions.
- Do not talk to other learners during the exam.
- Any form of dishonesty will result in immediate disqualification from the exam.

This exam consists of five pages, including the cover page.

Section A: Multiple Choice Questions (20 marks)

Circle the correct answer.

1. Which drawing standard is commonly used internationally for technical drawings?
   a) ISO
   b) ANSI
   c) DIN
   d) JIS
2. What is the purpose of a **break line** in a drawing?
   a) To show hidden edges
   b) To indicate a section cut
   c) To shorten a long object in the drawing
   d) To show center lines
3. In a technical drawing, which type of view shows the object from directly above?
   a) Front view
   b) Side view
   c) Top view
   d) Isometric view
4. What is the meaning of the term **'tolerance'** in engineering drawings?
   a) The exact size of a part
   b) The allowable variation in a dimension
   c) The scale used for drawing
   d) The type of line used
5. Which tool would you use to draw arcs of a specific radius?
   a) Ruler
   b) Protractor
   c) Compass
   d) Set square

Section B: True or False (10 marks)

Write **True** or **False** next to each statement.

1. Orthographic projection shows an object in 3D. _____
2. A center line is drawn using a continuous thick line. _____
3. Dimension lines have arrows at each end. _____
4. CAD stands for Computer-Aided Design. _____
5. In first angle projection, the top view is placed above the front view. _____

Section C: Short Answer Questions (30 marks)

1. Define the term **'engineering drawing'**. (5 marks)

2. Name and describe **three types of technical drawings** used in engineering. (9 marks)
3.
4.
5.
6. Explain the importance of **line conventions** in engineering drawings. (6 marks)

4. What is a **sectional drawing** and when would you use it? (5 marks)

5. List **four safety rules** to follow when using drafting tools. (5 marks)

Section D: Drawing (40 marks)

1. Draw the **front, top, and right side views** of a rectangular prism with dimensions:
   Length = 120 mm, Width = 50 mm, Height = 70 mm.
   Label all views and dimensions clearly. (25 marks)

2. Draw an **isometric projection** of the same rectangular prism above. (15 marks)

(Use the back of the paper if necessary)

End of Examination

MEMO

Section A: Multiple Choice Questions (20 marks)

1. **a) ISO**
2. **c) To shorten a long object in the drawing**
3. **c) Top view**
4. **b) The allowable variation in a dimension**
5. **c) Compass**

Section B: True or False (10 marks)

1. Orthographic projection shows an object in 3D. **False**
2. A center line is drawn using a continuous thick line. **False** (It's a chain line)
3. Dimension lines have arrows at each end. **True**
4. CAD stands for Computer-Aided Design. **True**
5. In first angle projection, the top view is placed above the front view. **False** (In first angle, top view is below front view)

Section C: Short Answer Questions (30 marks)

1. **Definition of engineering drawing:** (5 marks)

- Engineering drawing is a detailed and accurate graphical representation of an object, used to communicate technical information clearly and precisely.

2. **Three types of technical drawings:** (9 marks)

- **Orthographic drawing:** Shows multiple 2D views of an object from different angles.
- **Isometric drawing:** A 3D pictorial drawing where three axes are equally angled at 120°.
- **Sectional drawing:** A cutaway view showing internal features of an object.

3. **Importance of line conventions:** (6 marks)

- Line conventions help differentiate between types of lines (visible edges, hidden edges, center lines, etc.).
- They improve clarity and prevent misinterpretation.
- Essential for standardized communication in engineering drawings.

4. **Sectional drawing and usage:** (5 marks)

- A sectional drawing shows an object as if it were cut through to reveal internal details.
- Used when internal features cannot be clearly shown in external views.

5. **Four safety rules for drafting tools:** (5 marks)

- Handle sharp tools carefully to avoid injury.
- Keep your workspace clean and organized.
- Store tools safely when not in use.
- Use tools only for their intended purpose.

Section D: Drawing (40 marks)

1. **Orthographic views (25 marks):**

- Front view: Correct length 120 mm, height 70 mm.
- Top view: Correct length 120 mm, width 50 mm.
- Right side view: Correct width 50 mm, height 70 mm.
- Views aligned properly.
- Neat and accurate dimensioning and labeling.

2. **Isometric projection (15 marks):**

- Correct isometric shape with edges drawn at 30° from horizontal.
- Proportions match the given dimensions.
- Neat and clear labeling of edges and dimensions.

TOTAL : 100