

Technology – Grade 7

Welcome to your Conquesta Olympiad. When you have decided which of the answers is correct, scratch out the letter in the matching square on your answer sheet. Example:- If the answer to question 4 is c, then scratch out the letter c in the square containing c next to the number 4 (see example 1 below). If you've made a mistake and b should have been the answer, neatly cross out the mistake and then scratch out b (see example 2 below).

Example 1:- 4. a b ~~c~~ d

Example 2:- 4. a ~~b~~ ~~c~~ d

The Design Process

The design process enables you to develop a solution to a problem in the form of a product. Drawing during the design process is called 'graphical communication'. The drawings consist of outlines (thick, dark lines indicating the outlines of an object as well as the parts visible from outside the object), construction lines (thin, faint lines forming the basis of drawings) and hidden lines (dashed lines to show parts hidden from view).

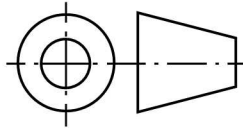
1. The picture shows the view of the truck.

- (a) front
- (b) top
- (c) side
- (d) back

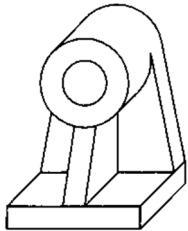
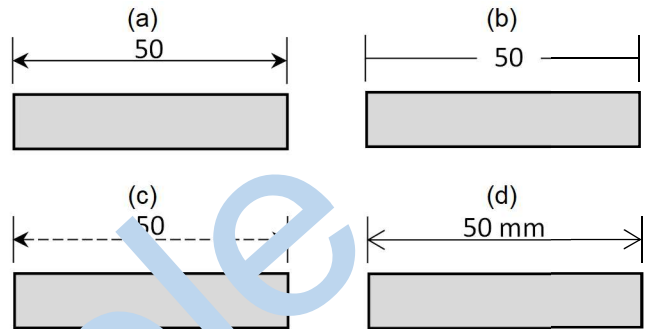


2. Choose the correct description for the symbol drawn below.

- (a) Third angle orthographic drawing.
- (b) Oblique drawing.
- (c) First angle orthographic drawing.
- (d) Perspective drawing.



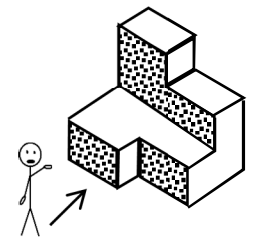
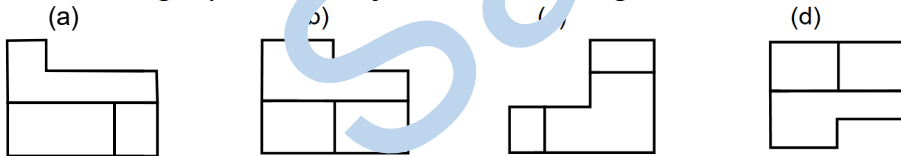
3. Choose the correct way to indicate dimensions in a graphic communication.



4. The type of drawing that makes use of a 45° angle is a/an
- (a) single vanishing point drawing.
 - (b) isometric drawing.
 - (c) oblique drawing.
 - (d) All of the above.

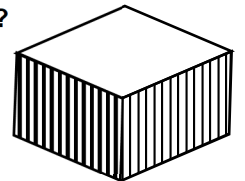
5. In which step of the design process will the final drawing (working drawing) be presented?
- (a) Evaluate.
 - (b) Investigate.
 - (c) Make.
 - (d) Design.

6. Which of the following diagrams represent the front view (indicated by the arrow and stick figure) of the 3D object shown on the right?



7. A designer made use of which improvement technique/s when sketching the block on the right?

- (a) Texture.
- (b) Thick and thin lines.
- (c) Shade and shadow.
- (d) All of the above.



8. 'Enhancing' drawings means

- (a) adding colour, texture and shading to the drawing.
- (b) making the drawing bigger.
- (c) making the drawing on coloured paper.
- (d) framing the drawing.

9. The specifications of a design or product is

- (a) a short statement on how to solve a problem.
- (b) a list of objectives a designer needs to achieve.
- (c) limits that affect the design or product.
- (d) Both (b) and (c) are correct.

10. Which scale will be most suitable for the scale drawing of the horses on the right?

- (a) 1:2
- (b) 1:8
- (c) 2:1
- (d) None of the above.



11. The design process enables you to develop a solution to a problem, in the form of a product.

What is the logical order of the four steps below?

- (i) Design. (ii) Evaluate. (iii) Investigate. (iv) Make.
 (a) i, ii, iii, iv (b) iv, ii, i, iii (c) iii, i, ii, iv (d) iii, i, iv, ii



12. What is the purpose of evaluating the finished product?

- (a) To identify the market. (b) To ensure the product is fit for its purpose.
 (c) To communicate your brief. (d) None of the above are correct.

Structures

A structure is a group of elements united to support a load with stability.

Examples are:- Natural structures (*spider-webs*), man-made structures (*bridges*), frame structures (*electricity pylons*), shell structures (*eggshells*), mass and solid structures (*brick walls*).

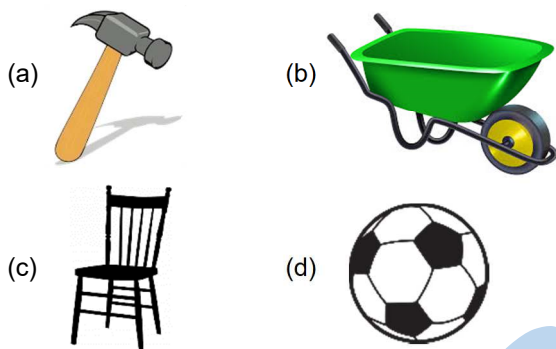
13. Egg cartons, food cans, bottles and pipes are examples of

- (a) manufactured shell structures.
 (b) natural shell structures.
 (c) manufactured frame structures.
 (d) natural frame structures.

14. Containing, sheltering, transporting and lifting are all words that describe the of a structure.

- (a) design (b) stability (c) function (d) shape

15. An example of a solid structure is



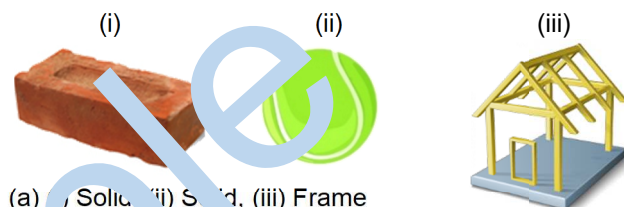
16. A is a man-made frame structure.

- (a) nest (b) spoon
 (c) bicycle (d) None of the above.

17. A force that stretches a structural member is

- (a) strut. (b) tension. (c) compression. (d) tie.

18. Name the type of structures below in order from (i) to (iii).



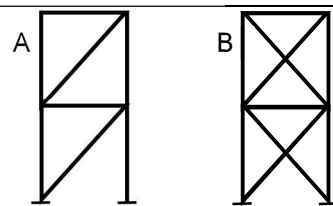
- (a) (i) Solid, (ii) Solid, (iii) Frame
 (b) (i) Solid, (ii) Shell, (iii) Frame
 (c) (i) Frame, (ii) Shell, (iii) Solid
 (d) (i) Shell, (ii) Solid, (iii) Frame

19. What is the purpose of the shell of the snail?

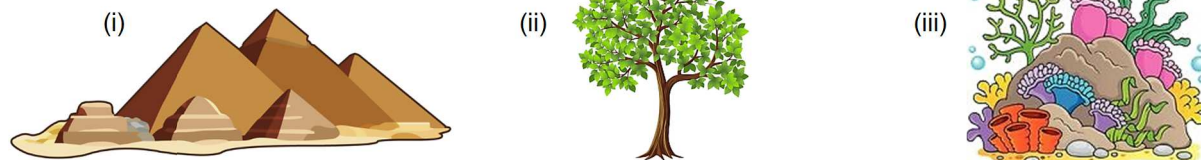
- (a) To contain. (b) To protect.
 (c) To support. (d) Both (a) and (b).

20. Study the pictures labelled A and B, then identify the correct answer.

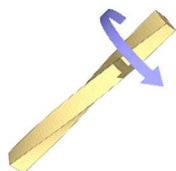
- (a) Structure A and B make use of triangulation.
 (b) Structure A and B make use of cross-bracing.
 (c) Structure B makes use of triangulation and Structure A uses cross-bracing.
 (d) Structure A makes use of triangulation and Structure B uses cross-bracing.



21. Classify the following structures in order.



- (a) (i) Man-made, (ii) Natural, (iii) Natural
 (b) (i) Man-made, (ii) Man-made, (iii) Natural
 (c) (i) Natural, (ii) Natural, (iii) Man-made
 (d) (i) Natural, (ii) Man-made, (iii) Natural



22. A load or force that tries to twist or spin members is called

- (a) tensile. (b) torsion. (c) compression. (d) shear.

23. What is the best way to describe a solid structure?

- (a) A load carrying itself. (b) Frames joined together.
 (c) A sturdy, shell-shaped structure. (d) A dense structure held together by its mass.

24. You would classify an electric pylon as a structure.

- (a) shell (b) shell and solid (c) frame (d) solid