



Tertiary and Vocational Education Commission
Knowledge Assessment – April 2022
Draftsperson
National Vocational Qualification Level 04



Time: 03 Hours

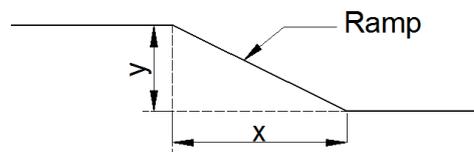
Instructions for the Candidates

- Answer all questions
- In each of the questions from 1 to 50, pick the one of the alternatives (a), (b), (c), (d) which you consider is correct or most appropriate.
- Mark a cross (x) on the number corresponding to your choice in the answer sheet provided.
- This question paper consists of 07 pages.

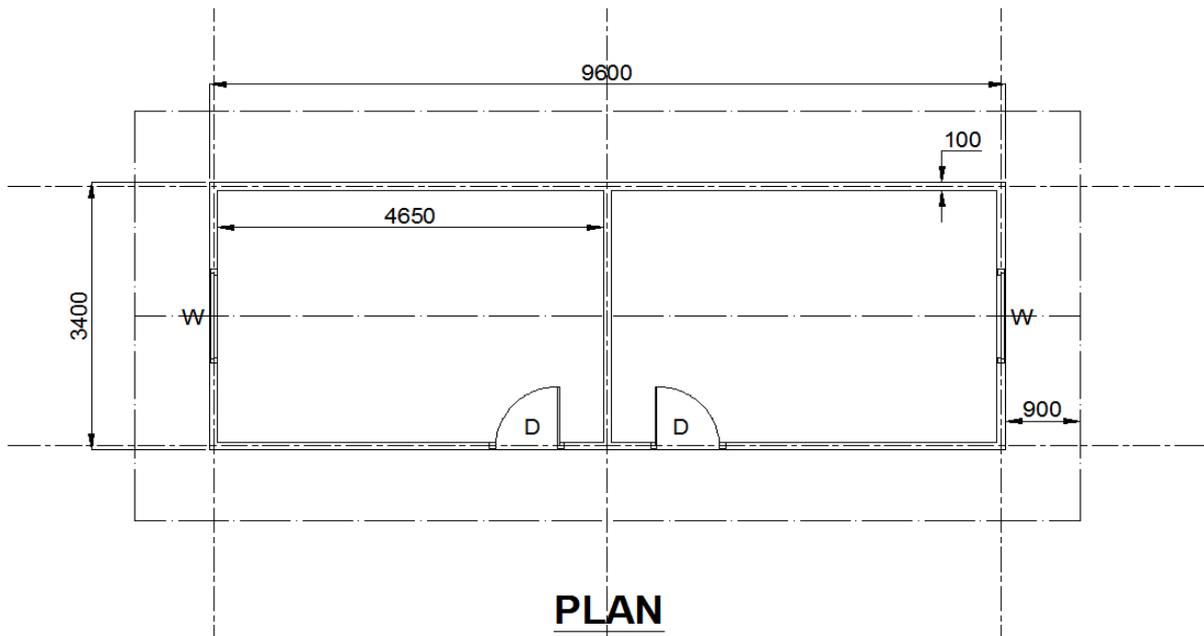
Part 1

1. How many inches are there in a one (01) foot?
 - a) Six inches
 - b) Thirty inches
 - c) Twelve inches
 - d) Fifteen inches
2. An example for oral communication is;
 - a) Body Language
 - b) Specifications
 - c) Conference
 - d) Eye Contact
3. DOA in a drawing office stands for;
 - a) Drawing Office Assistant
 - b) Director Office Assistant
 - c) Director of Assistant
 - d) Director of Accountant
4. What is the command used for drawing a Polygon using AutoCAD;
 - a) POL- Enter
 - b) P- Enter
 - c) PO- Enter
 - d) PL- Enter
5. What is the unit that is not a basic unit?
 - a) Meter (m)
 - b) Fahrenheit (F)
 - c) Kilo Gram (kg)
 - d) Ampere (A)
6. What is the mix ratio for Grade 20 concrete?
 - a) 1:1 1/2 : 3
 - b) 1: 3 : 6
 - c) 1: 2 : 4
 - d) 1: 1: 2

7. The best type of a tap that is suitable to fix at a public place is;
- Bib Tap
 - Pilar Tap
 - Ball Tap
 - Push Button Tap
8. Water Bound Macadam is the ;
- A road construction technique introduced by an Engineer named “Mac-Adam”
 - A technique to retain water in a reservoir, introduced by an Engineer named “Mac-Adam”
 - A special technique to extract water from a deep well.
 - None of the above
9. What is the instrument that is **not used** for levelling?
- Dumpy Level
 - Engineering Level
 - Automatic Level
 - Theodolite
10. To construct a new building, the clearance approval is **not** required from;
- Road Development Authority
 - Archaeological Department
 - Pradeshya Sabha
 - Education Ministry
11. What is the Standard Beam Angle?
- $63\frac{1}{2}^{\circ}$
 - $65\frac{1}{2}^{\circ}$
 - 66°
 - $73\frac{1}{2}^{\circ}$
12. What is the maximum slope for a building ramp?
- $y : x = 1 : 6$
 - $y : x = 1 : 7$
 - $y : x = 1 : 8$
 - $y : x = 1 : 8\frac{1}{2}$



Refer the Plan below and answer the questions from 13 to 17. The drawing shows a plan drawn for construction of a shop. The owner expects to use block work for walls and asbestos sheets for the roof.



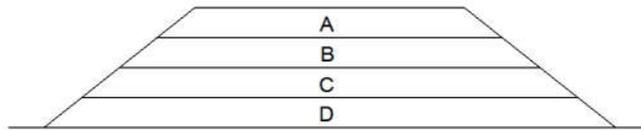
13. According to the drawing, what is the Center Line length?
- 29.4m
 - 28.9m
 - 25.6m
 - 25.0m
14. It is expected to tile the floor of this building. If the size of a tile is 60cm x 30cm, calculate the number of tiles required for tiling. Ignore the wastage and skirting.
- 8267
 - 166
 - 182
 - 83
15. What is the length of the Ridge plate of the building?
- 5.2m
 - 3.4m
 - 9.6m
 - 11.4m
16. What is the length of a reaper of the building?
- 3.4m
 - 5.2m
 - 11.4m
 - 9.6m
17. What is the suitable size of the wall plate for this building?
- 6" x 3"
 - 4" x 3"
 - 4" x 2"
 - 3" x 2"

18. If there is no uniform shape, what is the rule that **cannot be** used to calculate the approximate value of an area?
- Mid Ordinate Rule
 - Kelvin Rule
 - Trapezoidal Rule
 - Simpson's Rule
19. What is the best height to fix a bath shower for a bathroom?
- 6' from the floor level
 - 5' from the floor level
 - 7' from the floor level
 - 8' from the floor level
20. Which perspective does not belong to "Perspective Projection"?
- One point perspective
 - Two point perspective
 - Three point perspective
 - Four point perspective
21. The mode of communication that is not a "Major mean of communication"?
- Visual
 - Written
 - Oral
 - Non Oral
22. What is the material that should be included in the "Consumable Register" in a Drawing Office?
- French Curve
 - Pencil
 - Drawing Pen
 - Adjustable Set Squares
23. What is a Superseded Drawing?
- Totally cancelled drawing
 - A drawing drawn with special requirements
 - A drawing drawn for luxury housing
 - A drawing drawn for foreign countries
24. What is the accessory that is used to store drawings in a drawing office?
- Pigeon Hole
 - Drawing Tank
 - Pantograph
 - Plan racks & Hanging Clamps
25. This symbol is used in AutoCAD to;
- Draw rectangular sections
 - Draw polygonal sections
 - Draw similar shapes
 - Change the scale



26. Which part is not used to construct gable roof?
- Wall Plate
 - Hip Rafter
 - Purlin
 - Ridge Plate
27. What is the name of the first reading of the staff, taken after the setting out of the instrument?
- Back Sight
 - Fore Sight
 - Intermediate Sight
 - Change Point
28. What is the role of the Draught person in a drawing office?
- Planning new projects
 - Design drawings on the instruction of the Superior Officer
 - Prepare project reports
 - Collecting field data and field staff data
29. What is the structure used to discharge excess water in a tank?
- Sluice
 - Slit-trap
 - Field canal
 - Spill
30. When designing a road, what is the structure that is not coming across?
- Retaining Wall
 - Culverts
 - Bridges
 - Anicuts
31. Identify the symbol in an Electrical Drawing;
- Meter
 - Fuse
 - Distribution Board
 - Fluorescent Lamp
- 
32. What is the equation used to calculate the area of a trapezoid?
- $\frac{\text{Sum of the length of parallel sides}}{2} \times \text{height}$
 - $\frac{1}{2} \times \text{length of perpendicular base} \times \text{height}$
 - $\text{base} \times \text{height}$
 - $\text{length} \times \text{width}$
33. In AutoCAD drawings, what is the key to draw an Ellipse?
- E
 - EX
 - EL
 - ED

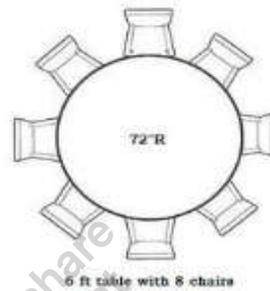
34. A cross section of a Flexible pavement is shown below. Name A, B, C and D respectively.



- a) Sub-Grade, Sub-Base, Base Course, Surface Course
 - b) Surface Course, Base Course, Sub-base, Sub-Grade
 - c) Surface Course, Sub Base, Base Course, Sub Grade
 - d) Sub Grade, Base Course, Sub Base, Surface Course
35. What are the main monsoon periods that bring rain fall to Sri Lanka?
- a) South western monsoon and North eastern monsoon
 - b) South eastern monsoon and South western monsoon
 - c) North eastern monsoon and South eastern monsoon
 - d) South eastern monsoon and North western monsoon
36. What is most suitable cross section of a door frame for a main door of a house?
- a) 4" x 3"
 - b) 4" x 2"
 - c) 6" x 3"
 - d) 4" x 6"
37. What is the standard size of an A1 Paper?
- a) 297 x 210
 - b) 420 x 297
 - c) 594 x 420
 - d) 841 x 594
38. What is the slope of a field channel?
- a) 0.0008
 - b) 0.1250
 - c) 0.0002
 - d) 0.0004
39. When fixing a water pump, what is the valve that used to connect to the end of the suction pipe?
- a) Ball Valve
 - b) Foot Valve
 - c) Non Return Valve
 - d) Stop Valve
40. Construction of a brick wall is required to be suspended, expecting to commence after for a long time. What is method to stop the brick layering?
- a) Tooth end
 - b) Step end
 - c) Stop end
 - d) None of the above

41. Archt. Jeffrey Bawa who had designed a number of extraordinary designs for Sri Lanka, has not designed;
- Sri Lanka Parliament
 - University of Ruhuna
 - Hotel Kandalama
 - University of Peradeniya
42. What are the scales required to adhere for Ground plan, Front elevation and Site plan respectively, when seeking building plan approval from a Pradeshiya Sabha?
- 1:500, 1:500, 1: 1000
 - 1:1000, 1:1000, 1: 500
 - 1:100, 1:100, 1: 1000
 - 1:100, 1:500, 1: 1000

43. If it is required to draw the given design, what is the command that should be used?
- Offset
 - Rectangular Array
 - Path Array
 - Polar Array



44. What is the symbol to represent the ‘Third Angle Direct Projection ‘?’



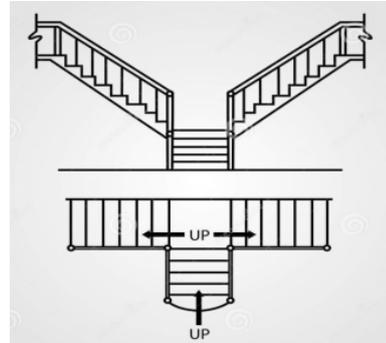
45. What is denoted by “TBM” in Engineering Surveying?
- Total Beam Mark
 - Temporary Bench Mark
 - Total Bench Mark
 - Team Bench Mark
46. What is the maximum height to be maintained when pouring concrete into a column in construction?
- 1m
 - 2m
 - 3m
 - 4m
47. In a stair case, what the maximum number is of steps that to be maintained continuously up to landing in a staircase?
- 14
 - 15
 - 16
 - 17

48. A benefit from a correct communication process is;

- a) Delay in feed back
- b) Waste of time
- c) Saving time
- d) Not gaining a best service

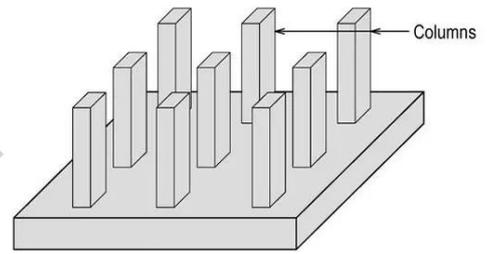
49. Identify the type of the stairs given in the drawing ;

- a) Straight Stairs
- b) Dog Legged Stairs
- c) Spiral Stairs
- d) Bifurcated Stairs



50. Identify the foundation type given in the drawing;

- a) Raft Foundation
- b) Strip Foundation
- c) Pad Foundation
- d) Pile Foundation



(01 x 50 = 50 Marks)



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Instructions for the Candidates

- Answer for any five (05) Questions.
- Answer the questions in the spaces provided in the same question paper
- This question paper consists of 05 pages.
- Non programmable calculators are allowed

Part 2

1.

i). Name three (03) types of furniture in a Drawing Office.

(03 Marks)

ii). Draw two (02) tools used in engineering drawings.

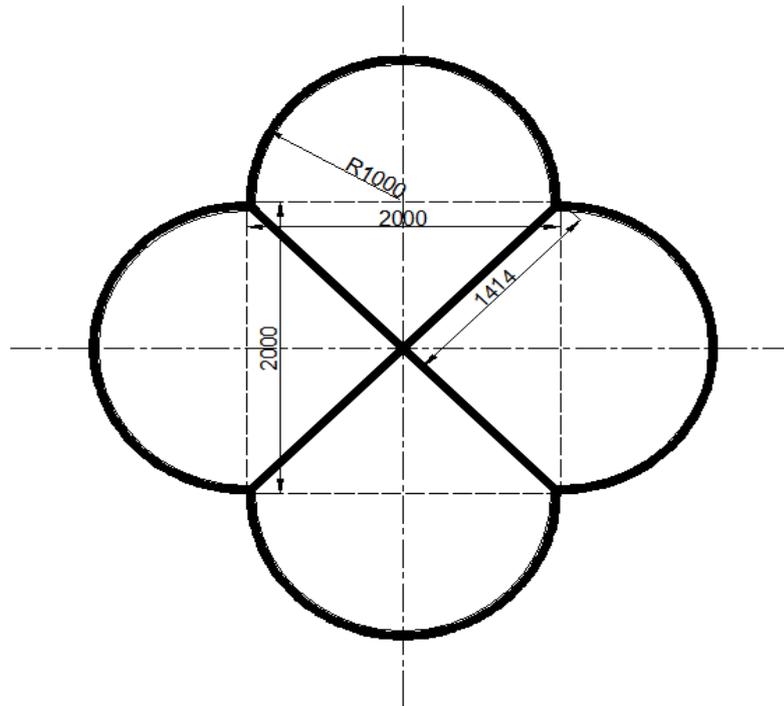
(02 Marks)

iii). Identify the codes/ short keys used in Auto CAD.

(05 Marks)

- a) B
- b) H
- c) AA
- d) MA
- e) TB

2. A landscape technician proposed to construct flower beds as per the drawing given below:



- i). He expects to lay a row of beautiful black stones on the flower bed which is appearing in black colour. What is the total length of the bed required for stone paving? (05 Marks)

- ii). What is the total area of the flower bed? (05 Marks)

3.

i). Name three (03) items that should be included in a Site Plan?

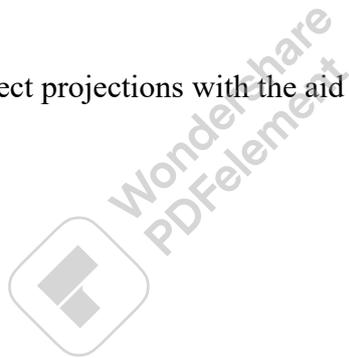
(03 Marks)

ii). Name two (02) shapes that can be derived from cutting a cone.

(02 Marks)

iii). Explain the types of direct projections with the aid of drawings.

(05 Marks)



4.

i). Name four (04) instruments / tools to setting out a building.

(02 Marks)

ii). Name three (03) types of computer packages that can be used in computer aided drawings.

(03 Marks)

iii). Draw a Plan view of a Drawing of pitched roof.

(05 Marks)



5.

i). Draw a sketch of a tank and name six (06) parts.

(03 Marks)

ii). Name two (02) types of taps and name the places of their respective use.

(02 Marks)

iii).

W1- 6'-9" x 6'- 6" Three sash timber framed glass window with louvers on top

Draw the plan and Elevation for a window as per the above given instruction details

(05 Marks)