higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

NATIONAL CERTIFICATE: MULTI-DISCIPLINARY DRAWING OFFICE PRACTICE

COMPUTER-AIDED DRAUGHTING

(6010035)

21 April 2021 (X-paper)
09:00–12:00

REQUIREMENTS: Yellow cover folder BOE 8/15 and A4 drawing paper

This question paper consists of 5 pages, 3 diagram sheets, 1 schedule and 1 answer sheet.

276Q1A2121

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NATIONAL CERTIFICATE: MULTI-DISCIPLINARY DRAWING OFFICE PRACTICE
COMPUTER-AIDED DRAUGHTING
TIME: 3 HOURS
MARKS: 100

INSTRUCTIONS AND INFORMATION

1. Answer all the questions.
2. Answer QUESTION 1 on the attached ANSWER SHEET.
3. All the other questions must be answered on A4 DRAWING SHEETS. Do not use A3 drawing sheets.
4. Read all the questions carefully.
5. Number the answers according to the numbering system used in this question paper.
6. Use only ONE side of the DRAWING SHEET to plot or print the answers.
7. Each drawing must be plotted or printed on a separate DRAWING SHEET.
8. The QUESTION NUMBER must appear at the top left-hand corner of each sheet.
9. All candidate information must be plotted in the title block.
10. Draw a border around each DRAWING SHEET.
11. All drawings must be drawn to the given scale.
12. Use your own discretion where dimensions are not given.
13. Candidates must plot or print their own drawings.
14. A balanced layout must be maintained. Candidates must plan well in order to earn marks.
15. Insert all the loose DRAWING SHEETS and ANSWER SHEET in the cover folder BOE8/15. Do not staple them.
16. Write neatly and legibly.

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QUESTION 1: COMPUTER ORIENTATION

1.1 Indicate whether the following statements are TRUE or FALSE by writing only 'True' or 'False' next to the question number (1.1.1–1.1.4) in the ANSWER SHEET.

1.1.1 SMSs are short messages that are sent from a mobile telephone.

1.1.2 A screen saver is an application that allows one to save one's work in case of a power outage.

1.1.3 Eighteen bits can be regarded as one unit of information.

1.1.4 The ROM memory retains all the information once the computer is switched off.

(4 × 1) (4)

1.2 Define the following terms commonly used in the information technology industry:

1.2.1 Fibre optics (1)

1.2.2 Work station (1)

1.2.3 Modem (1)

1.2.4 E-mail (1)

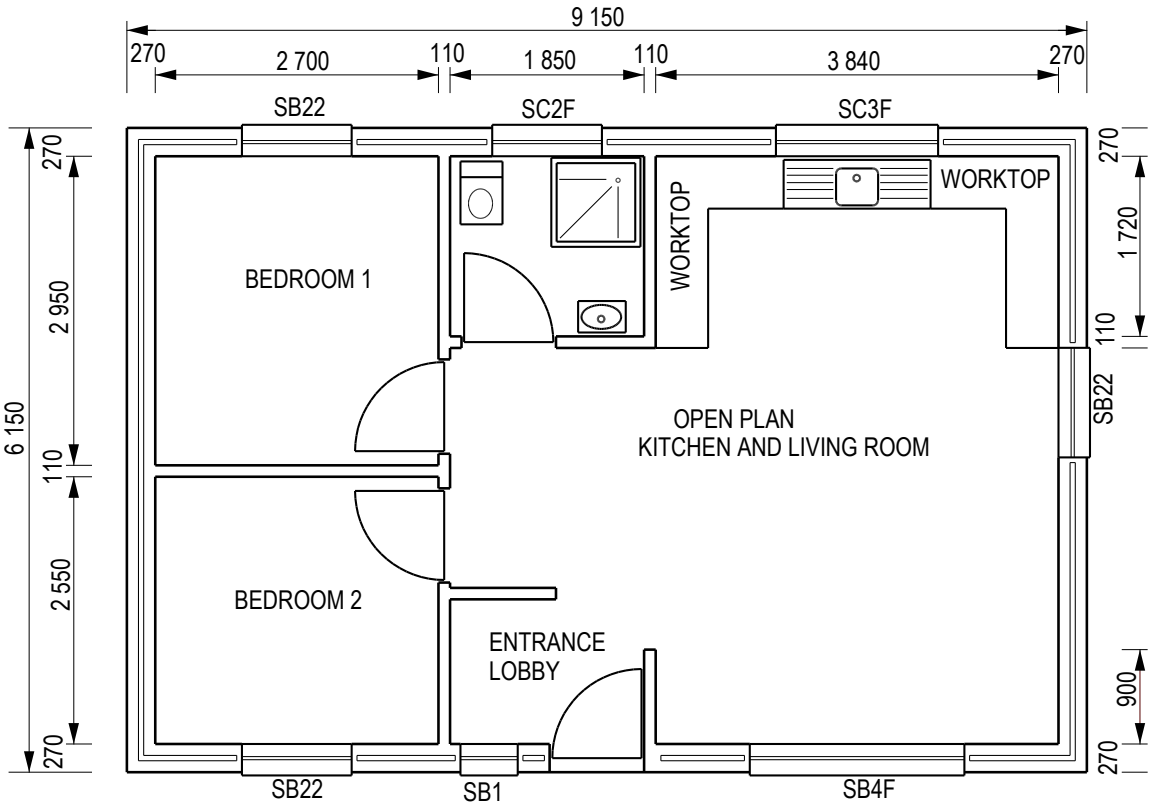
1.2.5 Network (2)

[10]

QUESTION 2: BUILDING DRAUGHTING

FIGURE 1 shows a small holiday beach bungalow. On scale 1:50, draw the given floor layout. Use A4 DRAWING SHEET in landscape orientation. Use ADDENDUM 1 (attached) for the window sizes.

The completed drawing must be fully dimensioned with all the labels and window code numbers. Supply each room with suitable floor covering.



PLAN LAYOUT OF A BEACH BUNGALOW
SCALE 1:50

FIGURE 1 **[20]**

QUESTION 3: ELECTRICAL DRAUGHTING

Refer to FIGURE 2, DIAGRAM SHEET 1 (attached). Retrieve the floor plan in QUESTION 2 and save it as QUESTION 3. Delete all the dimensions and window code numbers.

Use A4 drawing paper in landscape orientation to draw the following:

3.1 All electrical fitments as shown. (15)

3.2 The given electrical legend. (5)

[20]

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QUESTION 4: STRUCTURAL STEEL DETAILING

Structural steel detailers are required to draw large scale detailed drawings of the various components of steel roof trusses. FIGURE 3, DIAGRAM SHEET 2 (attached), shows a line diagram of such a roof truss as well as the incomplete detail at N.

4.1 On scale 1:100, draw the given line diagram. Insert all the dimensions. (3)

4.2 On scale 1:5, draw the completed detail to include the following:

- The system centre lines.
- The correct view of the rolled steel angles.
- The rafter (top boom) must have five equally spaced M12 bolts.
- Three equally spaced M12 bolts for the vertical and diagonal struts. (17)

The completed detail must be fully labelled. Both the drawings must be printed on the same A4 DRAWING SHEET in landscape orientation. **[20]**

QUESTION 5: GENERAL AND MECHANICAL DRAUGHTING

FIGURE 4, DIAGRAM SHEET 3 (attached), shows FIVE itemised components that will be used to assemble a pulley drive.

5.1 On scale 1:10, draw items1 to 5 as shown in FIGURE 4. (16)

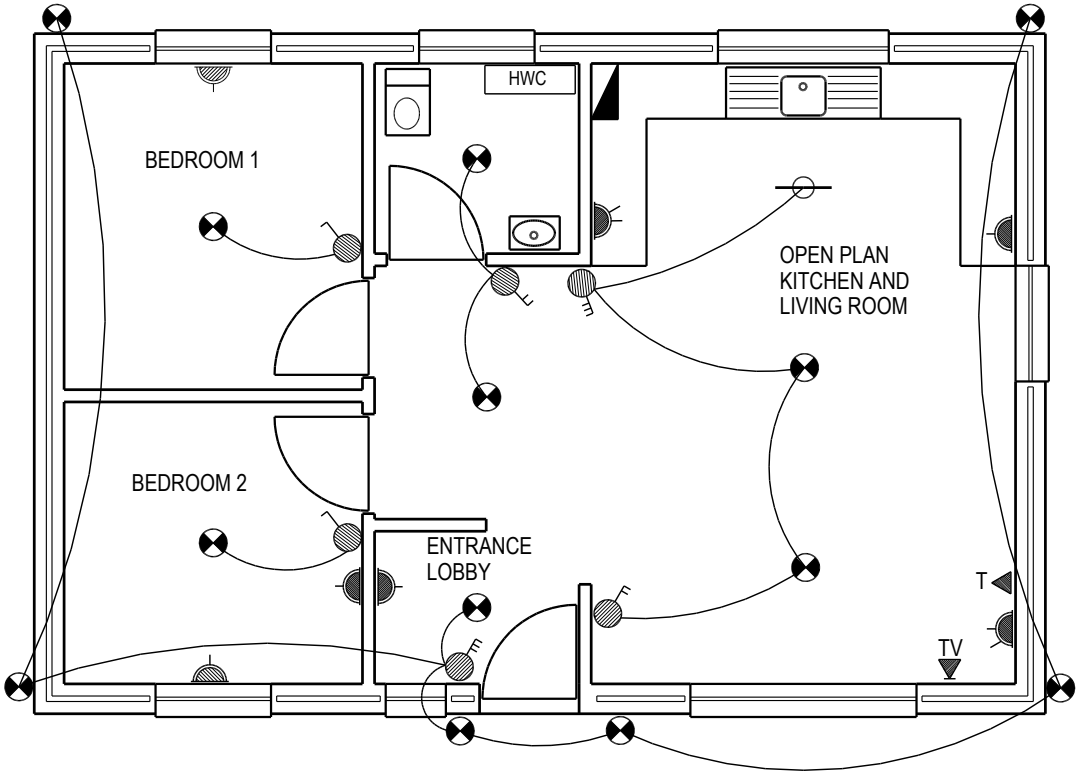
5.2 Compile a material list for SIX similar pulley drives. (3)

A balanced layout must be maintained to ensure that all the items are drawn on the same A4 DRAWING SHEET in landscape orientation. All the dimensions, item numbers and centre lines must be included. Ensure that the correct scale is used. (11)
[30]

TOTAL: 100

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DIAGRAM SHEET 1



ELECTRICAL LAYOUT FOR BEACH BUNGALOW

ELECTRICAL LEGEND	
	15 AMP POWER POINT
	DOUBLE 15 AMP POWER POINT
	LIGHT FITTING
	SINGLE FLUORESCENT LIGHT FITTING
TV	TV CONNECTION
	LIGHT SWITCH
	2 WAY LIGHT SWITCH
	3 WAY LIGHT SWITCH
HWC	HOTWATER CYLINDER
	DISTRIBUTION BOARD

FIGURE 2

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DIAGRAM SHEET 2

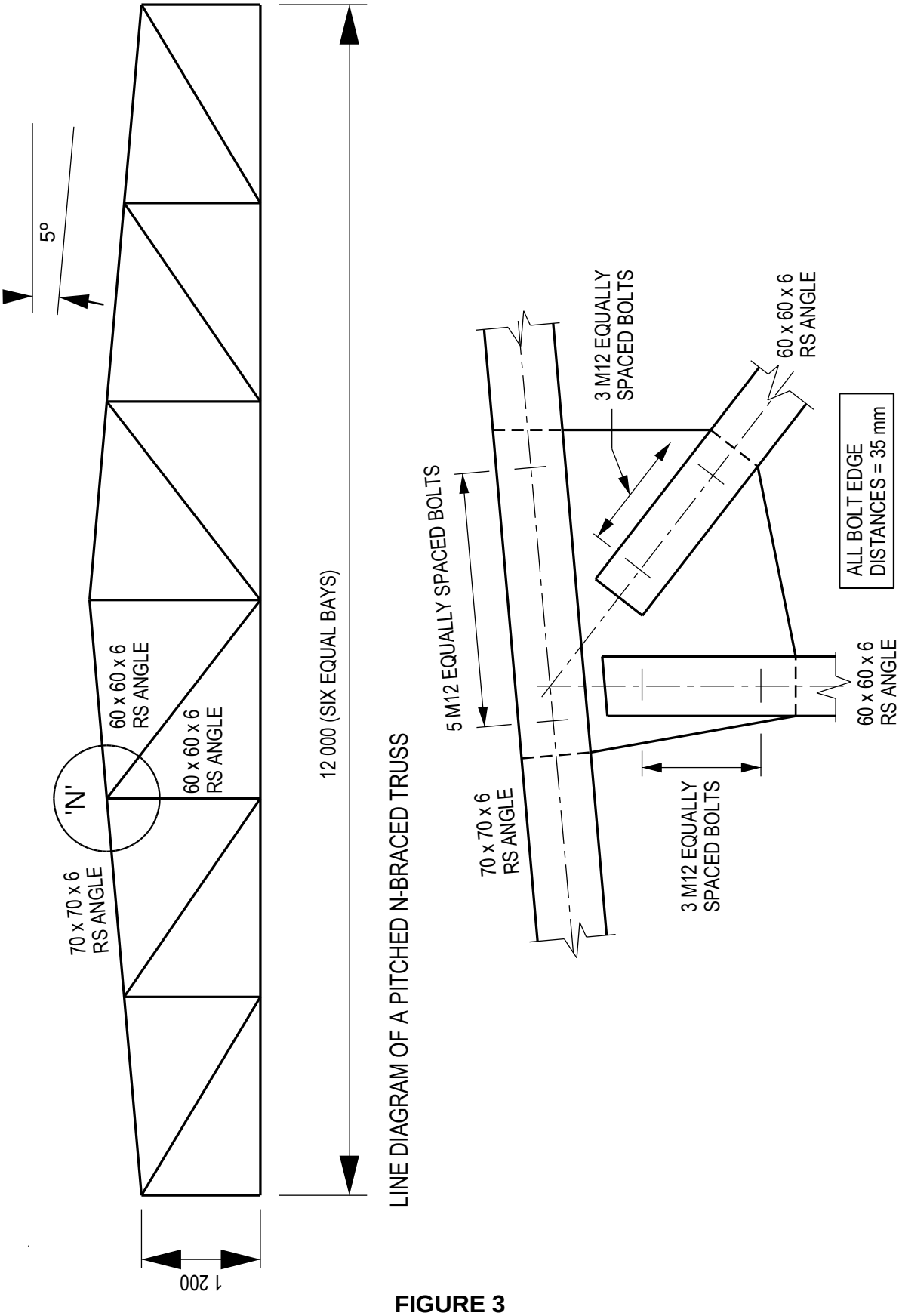


FIGURE 3

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DIAGRAM SHEET 3

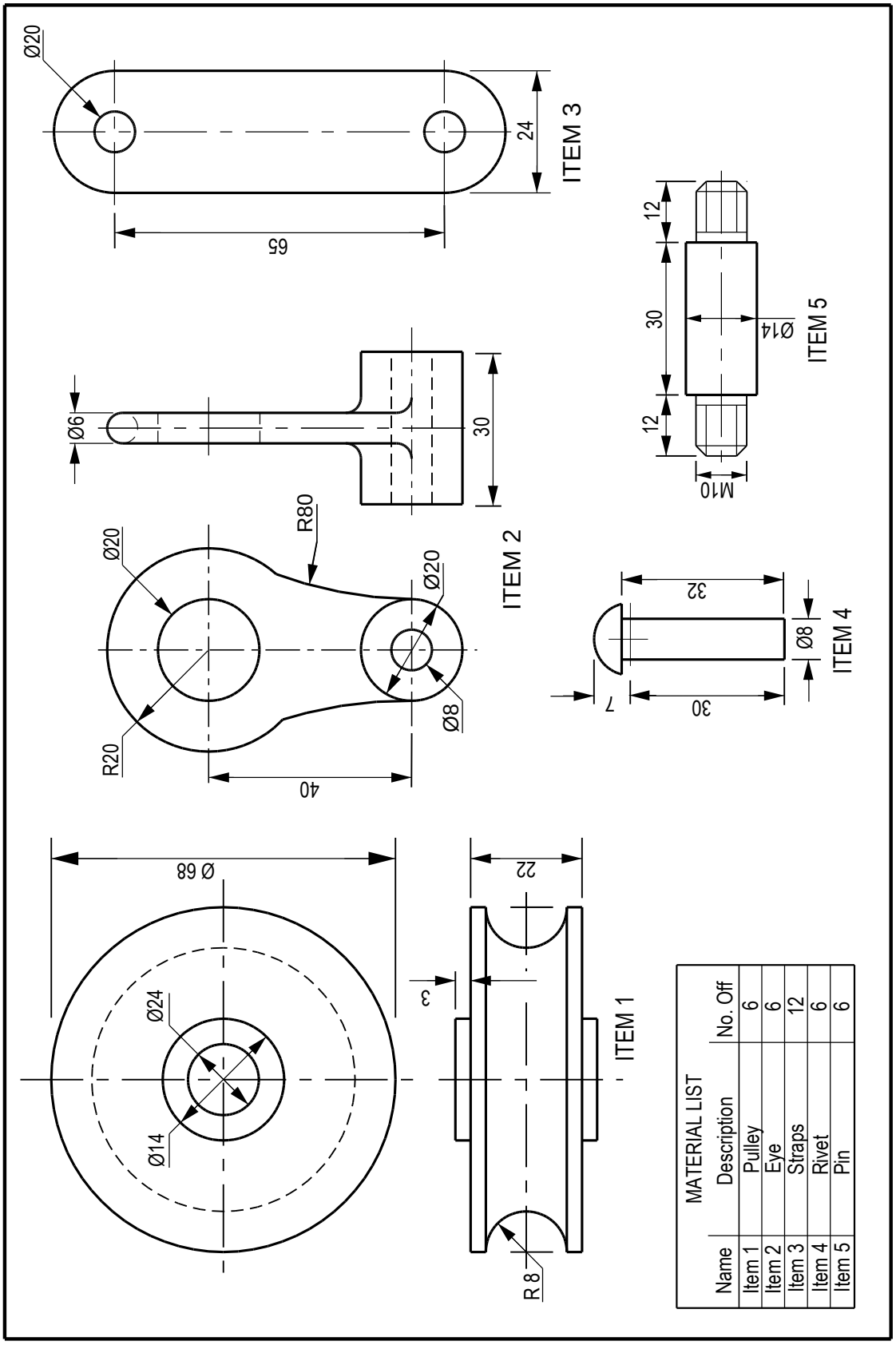


FIGURE 4

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(6010035)

SCHEDULE Timber window schedule



(Figures in brackets indicate glass area)

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ANSWER SHEET EXAMINATION NUMBER: | | | | | | | | | | | | | |

Candidates may use a pencil or pen.

QUESTION 1

1.1 1.1.1 _____

1.1.2 _____

1.1.3 _____

1.1.4 _____

(4 × 1) (4)

1.2 1.2.1 _____

_____ (1)

1.2.2 _____

_____ (1)

1.2.3 _____

_____ (1)

1.2.4 _____

_____ (1)

1.2.5 _____

_____

_____ (2)

[10]

Question 1……/10

Question 2……/20

Question 3……/20

Question 4……/20

Question 5……/30 **TOTAL……/100**

……%

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