



DEPARTMENT OF
EDUCATION

LOWER
SECONDARY
SCHOOL
CERTIFICATE
EXAMINATION
(LSSCE)

DESIGN AND
TECHNOLOGY

Wednesday

08th October 2014

Time allowed:

1 hour 30 minutes

Candidates are advised to
fully use the time
allocated

D & T

INSTRUCTIONS TO CANDIDATES:

(To be read out by the external invigilator before the start of the examination)

There are **36** questions in this paper. Attempt **ALL** questions even if you are not so sure of some of the answers.

The Examination is divided into three parts:

PART A: Multiple Choice (Questions 1 to 20)

PART B: Short Answer (Questions 21 to 35)

PART C: Extended Response (Question 36)

The Answer Sheet is part of the Examination Booklet. Take out the middle pages and remove the Answer Sheet by tearing along the perforation. You may use the blank sheet for rough work.

Write your province code, school code, candidate number, name and school name in the space given on the **ANSWER SHEET**.

For each question in **PART A (Questions 1 to 20)**, choose the correct answer by writing the letter A or B or C or D in the space provided on the **ANSWER SHEET**.

For each question in **PART B (Questions 21 to 35)** and **PART C (Question 36)**, work out the answer and write the answer in the space provided on the **ANSWER SHEET**.

If you find a question very difficult, do not spend too much time thinking about it. Skip the question and go on with the rest of the paper. If you have time in the end, return to the difficult questions and think about them more carefully.

Write your answers in **BLUE** or **BLACK** ink (pen or biro).

If you decide to change an answer, make your correction as shown below so that it is clear to the markers what your final answer is. Do **NOT** use correction fluid on your answer sheet.

Example



Hand in **BOTH** the Answer Sheet and the papers used for rough work at the end of the examination.

Extra time will NOT be allowed to complete the examination under any circumstances.

Penalty for cheating or assisting others to cheat in national examinations is non-certification.

**DO NOT TURN OVER THIS PAGE AND DO NOT
WRITE UNTIL YOU ARE TOLD TO START.**

PART A: MULTIPLE CHOICE QUESTIONS**(QUESTIONS 1 to 25)****25 MARKS**

For each question, choose the correct answer and write A or B or C or D in the space provided on the ANSWER SHEET.

QUESTION 1

In designing a dining table, the most important factor considered is the *height*.

The standard height should be

- A. 70 mm. B. 700 mm. C. 7000 mm. D. 70,000 mm.

QUESTION 2

A good designer designs products that best fit the _____.

- A. style B. school C. environment D. visual elements

QUESTION 3

Jack designed a model using the scale 1:10. This means every 10 mm on the model is equal to _____ on a final product.

- A. 10 mm B. 50 mm C. 100 mm D. 1000 mm

QUESTION 4

In all these oblique drawings, which one of them makes the object look more natural but it is often harder to draw?

- A. Oblique B. Cabinet oblique
C. Cavalier oblique D. Planometric oblique

QUESTION 5

Which of the following measuring tool is designed with special features to measure objects less than one hundredth (1/100) of a millimeter?

- A. Vernier caliper B. Micrometer
C. Outsider caliper D. Inside caliper

QUESTION 6

Abrasive paper with grit size of between 20 – 80 is _____.

- A. fine B. medium C. coarse D. very fine

QUESTION 7

When bolts and nuts are used on a project, washers are also included to

- A. reduce friction. B. reduce vibration. C. increase friction. D. increase vibration.

For Questions 8 and 9, refer to the information below on the design brief for information and communication technology.

The following are key steps in the design brief but they are not in the correct order.

- I. Design II. Evaluation III. Investigation IV. Production

QUESTION 8

Which of the above key steps in the design brief is the second step?

- A. I B. II C. III D. IV

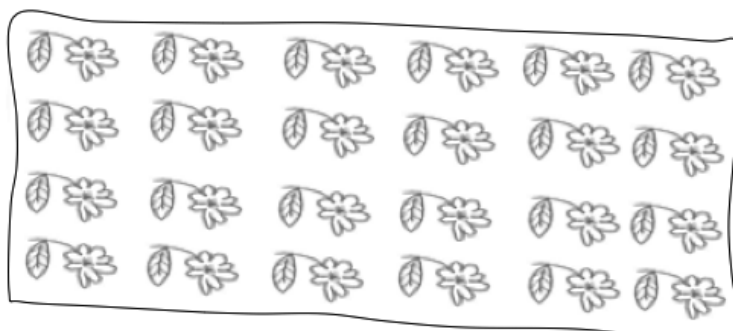
QUESTION 9

What would be the operational order of the key steps in the design brief?

- A. I, II, III, IV B. II, III, I, IV
C. III, I IV, II D. IV, I, III II

QUESTION 10

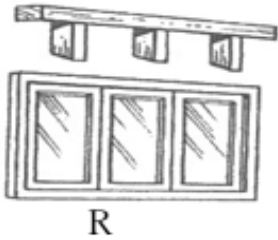
What type of printing design produces the type of print shown below?



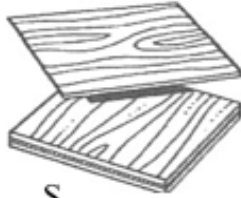
- A. Dye
B. Block
C. Roller
D. Screen

For Questions 11 and 12, refer to the following information.

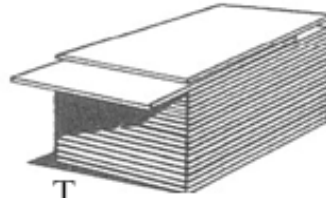
Timber is processed into different products to suit various uses. Below are some examples of these products.



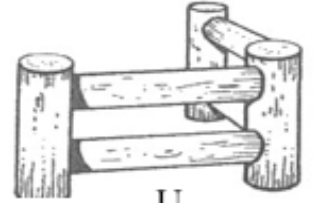
R



S



T



U

QUESTION 11

Which timber product is suitable to be used as *piers*?

- A. R B. S C. T D. U

QUESTION 12

Which timber product is known as the *particle board*?

- A. R B. S C. T D. U

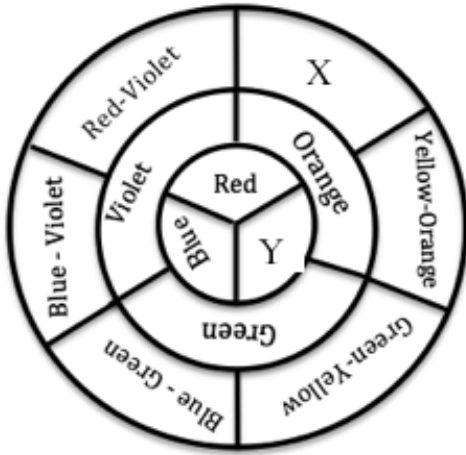
QUESTION 13



Which aspect of design was not considered in the construction of the chair and table in the above cartoon?

- A. Aesthetics B. Economics
C. Balance and proportion D. Materials and properties

For Questions 14, 15 and 16, refer to the colour wheel below.



QUESTION 14

What colour would letter X in the colour wheel represent?

- A. Red - green
- B. Yellow - red
- C. Red - orange
- D. Orange - yellow

QUESTION 15

What colour would be represented by letter Y in the colour wheel?

- A. Black
- B. Brown
- C. White
- D. Yellow

QUESTION 16

The colour blue-green is achieved by adding more

- A. blue to the green.
- B. blue to the yellow.
- C. yellow to the green.
- D. blue and yellow to the green.

QUESTION 17

Over the centuries, the house has gone through a lot of technological changes with the materials used to construct it and the structures it has.



According to the flow diagrams, which two basic building structures are compounded in one structure of diagram X?

- A. Door and roof.
- B. Post and wall.
- C. Roof and floor.
- D. Door and window.

For Questions 18, 19 and 20, use the four fastening techniques below to answer the questions.

- | | | | |
|------|-------------------|-----|----------------------|
| I. | Jointing | II. | Mechanical fastening |
| III. | Chemical adhesive | IV. | Cohesion |

QUESTION 18

Which technique can be best illustrated by welding and soldering?

- A. I B. II C. III D. IV

QUESTION 19

Using the common PVA glue to mend an old shoe is an example of using _____.

- A. I B. II C. III D. IV

QUESTION 20

The door can be fastened with a pair of butt hinge.

Which fastening method is used?

- A. I B. II C. III D. IV

PART B: SHORT ANSWERS**(QUESTIONS 21 to 35)****20 MARKS**

For each question, work out the answer and write the answer in the space provided on the ANSWER SHEET.

QUESTION 21

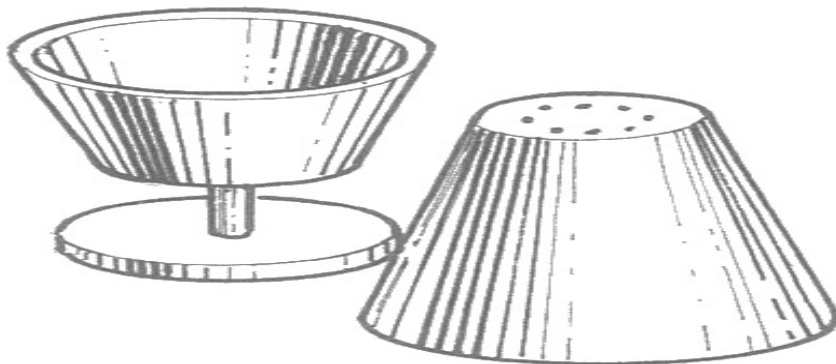
A plumb bob is a weight attached to the end of a string line. It gives accurate reading and works on the principle of _____ holding it plumb.

QUESTION 22

What is the name of a special tool used to draw around to reproduce the original outline, or a feature, any number of times with accuracy?

QUESTION 23

What is the term used to describe a less attractive surface that does not show marks and fingerprints on it?

QUESTION 24

What is the element of design used to create the above drawings?

QUESTION 25

Read the passage below and answer the question that follows.

Each material has good and bad points. Mild steel is strong, but it rusts. Plastics are waterproof, but will not stand too much heat. Cheap board is cheap, but it cannot be used in wet situations.

The passage is referring to the _____ of materials.

For Questions 26 and 27, refer to the elements of design listed in the box below.

Points	Lines	Shapes	Forms	Colours	Tone
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QUESTION 26

Three dimensional (3D) drawings of object such as cubes and cones are called_____.

QUESTION 27

The degree to which colour is light or dark is known as _____.

For Questions 28 and 29, refer to the following information below.

These are the set of hand gloves used for particular tasks. They both are manufactured using different materials.



I



II

QUESTION 28

Which is better to use when handling toxic waste?

QUESTION 29

Which is better to use when handling barbed-wire for fencing?

For Questions 30 and 31, refer to the list of technical drawing equipment in the box below.

Compass	T-square	30° x 60° Set square	Divider
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QUESTION 30

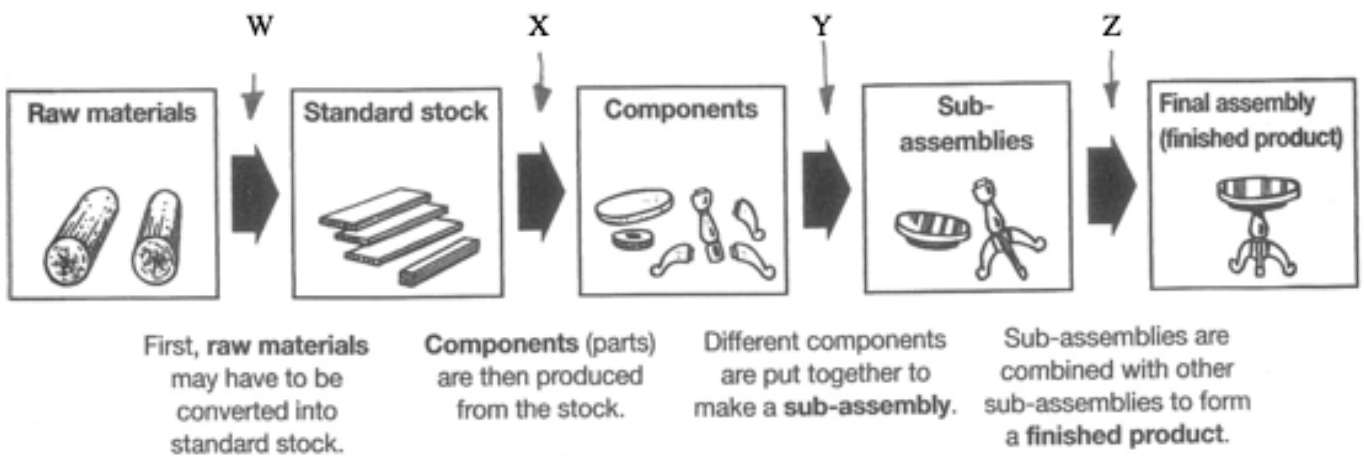
Which other drawing tool can also be used to transfer measurements accurately apart from the divider?

QUESTION 31

Which drawing tool is used to draw horizontal lines only?

For Questions 32 and 33, refer to the following information.

This flow chart shows the basic steps of a production procedure in manufacturing. W, X, Y and Z are the stages.



QUESTION 32

At which stage of the manufacturing process is modeling required?

QUESTION 33

Which stage of the manufacturing process involves aesthetic finish?

For Questions 34 and 35, refer to the following information.

Below are four (4) different planes used in woodwork.

100mm	250mm	400mm	600mm
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QUESTION 34

The most appropriate plane recommended for lighter work would be _____ in size.

QUESTION 35

Sam is working on the legs of a dining table. The timber is hard and rough.

What millimeter plane would he prefer using?

PART C: EXTENDED RESPONSE**5 MARKS****QUESTION 36**

Below are examples of five (5) safety signs that help prevent injury and ensure safety of staff at given points in the workplace.



i



ii



iii



iv



v

Write T (True) or F (False) beside the meaning of each sign on your answer sheet.

Safety Sign	Meaning	True or False
i.	First Aid	_____
ii.	Flammable	_____
iii.	Toxic Hazard	_____
iv.	High Voltage	_____
v.	No Entry	_____

END OF EXAMINATION

LOWER SECONDARY SCHOOL CERTIFICATE EXAMINATION – 2014
DESIGN & TECHNOLOGY – ANSWER SHEET

YEAR		PROV.		SCHOOL			CAND No.		
1	4								



MARKER 1

NAME	
SCHOOL	

PART A: (QUESTION 1 TO 20)

Write the letter of your answer next to each question number below.

1	
2	
3	
4	
5	

6	
7	
8	
9	
10	

11	
12	
13	
14	
15	

16	
17	
18	
19	
20	

PART B (QUESTION 21 TO 35)

Write your answer next to each question number below.

21	
22	
23	
24	
25	

26	
27	
28	
29	
30	

31	
32	
33	
34	mm
35	mm

PART C (QUESTION 36)

Write your answer next to each question number below.

36	i	
	ii	
	iii	
	iv	
	v	



MARKER 2

DO NOT WRITE ON THIS PAGE

YOU MAY DO YOUR ROUGH WORK ON THIS PAGE

CAREFULLY TEAR ALONG THIS PERFORATION

YOU MAY DO YOUR ROUGH WORK ON THIS PAGE