



STUDENT EDUCATION NUMBER									

Samoa Secondary Leaving Certificate

DESIGN TECHNOLOGY

2022

QUESTION and ANSWER BOOKLET

Time allowed: 3 Hours & 10 minutes

INSTRUCTIONS

1. You have 10 minutes to read **before** you start the exam.
2. Write your **Student Education Number (SEN)** in the space provided on the top right hand corner of this page.
3. **Answer ALL QUESTIONS.** Write your answers in the spaces provided in this booklet.
4. If you need more paper to write your answers, ask the Supervisor for extra paper. Write your SEN on all extra sheets used and clearly number the questions. Attach the extra sheets at the appropriate places in this booklet.

STRANDS		Page	Time (min)	Weighting
STRAND 1	DESIGN PROCESS	2-5	45	25
STRAND 2	TOOLS	6-8	25	15
STRAND 3	MATERIALS	9-11	40	20
STRAND 4	PROCESSES	12-17	50	30
STRAND 5	TECHNOLOGY	18-19	20	10
TOTAL			180	100

Check that this booklet contains pages 2-20 in the correct order and that none of these pages are blank.

HAND THIS BOOKLET TO THE SUPERVISOR AT THE END OF THE EXAMINATION.

Write your answer in the spaces provided for Questions 1 – 12.

1. Name **ONE** type of Design Brief.

SL 1

2. State a design problem you wrote in the design brief that you completed for your Internal Assessment.

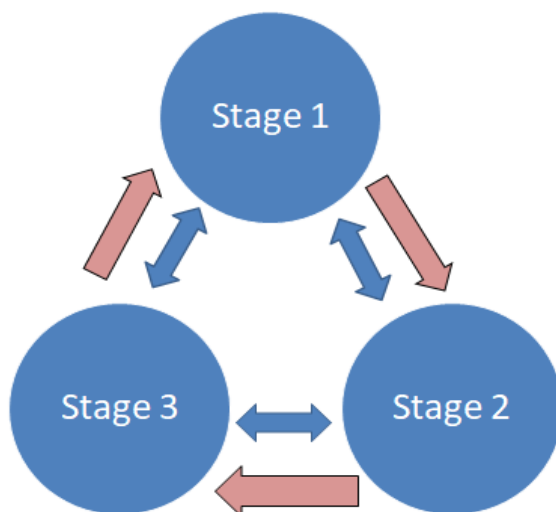
SL 1

3. Provide the right build solution for the problem given above.

SL 1

Use the information in the diagram below to answer Questions 4 – 8.

Provided below is a model of the Design process



4. Name the third stage of the Design process.

SL 1

5. Name the stage in the Design Process at which project specifications are selected.

SL 1

6. The design process model has both clockwise and anti-clockwise arrows. Explain the purpose of the anti-clockwise arrows in the design process.

SL 3

7. List TWO stages of the design process in the correct order.

1. _____
2. _____

SL 2

8. Describe the importance of the first stage in the design process.

SL 2

For Questions 9 and 10, differentiate between the two concepts in Design.

9 Isometric and Oblique

SL 3

10. Cavalier and Cabinet

SL 3

11. Explain why it is important to provide more than three sketches for a solution.

SL 3

Identify the following tools by matching a name provided in the box below with the corresponding picture.

Folding Rule Jig Saw Skill Saw Flooring Saw

13.



SL 1

14.



SL 1

15.



SL 1

16. Describe the function of a drill.

SL 2

17. Explain why tools need to be stored in a special tool room?

SL 3

18. Shown below are the diagrams of a Claw and a Straight-pein hammer.



Claw Hammer



Straight-pein hammer

Compare the usage of these two hammers.

SL 3

19. You own a construction company that has a number of hand and power tools that are designed to help construction workers, carpenters, and other manual labourers in the performance of their work.

Discuss the importance of using a tool checklist for your construction company. Use examples to support your discussion.

SL 4

20. Name a common timber defect.

SL 1

For Questions 21 – 23, sketch THREE Timber Defects

21.

SL 1

22.

SL 1

23.

SL 1

24. Describe the advantage of natural seasoning of timber.

SL 2

25. Differentiate the quality of local and overseas timber.

SL 3

26. Explain how the process of transporting logs from a deep forest 50 years ago is different from the process used today.

SL 3

For Questions 27 – 28, discuss the advantages and disadvantages of the following types of sawing. Use clear examples to support your answer.

27. Quarter Sawing

SL 4

28. Flat Sawing

SL 4

For Questions 29 – 32, draw the following joints.

29. Mitre Halving Joint



SL 1

30. Box-Pin Joint



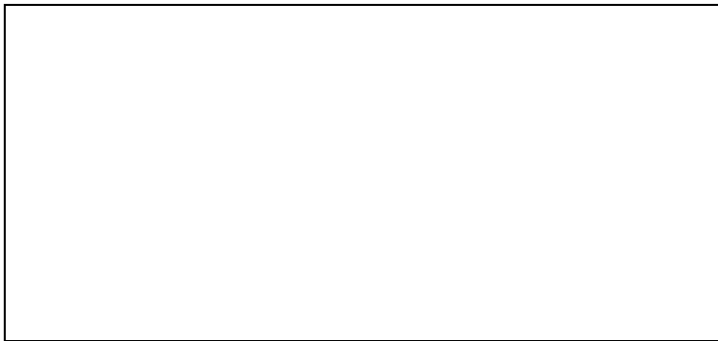
SL 1

31. Dovetail Joint



SL 1

32. Dowel Joint



SL 1

33. Name the material that is used to reduce the size of a timber.

SL 1

34. What is the most suitable material used for fastening timber joints?

SL 1

For Questions 35 – 36, define the following in your own words.

35. Varnish

SL 1

36. Stain

SL 1

For Questions 37 – 38, convert the following measurements. Show ALL working.

37. Convert 16 feet into millimetres.

$$16' = \underline{\hspace{2cm}} \text{ mm}$$

SL 2

38. Convert 1650 millimetres into metres.

$$1650\text{mm} = \underline{\hspace{2cm}} \text{ m}$$

SL 2

39. List **TWO** tools used to plumb a true vertical standing of a post.

1. _____
2. _____

SL 2

40. Draw an isometric drawing of a simple Coin Box with its dimensions.

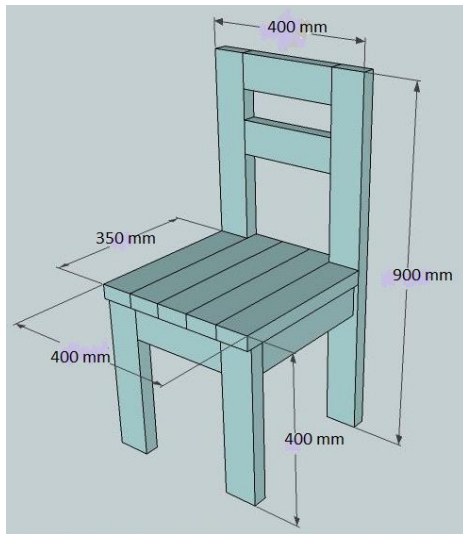


SL 2

41. Explain the making of a mitre joint by listing 5 steps in the correct order.

SL 3

Use the diagram below to answer Questions 42 and 43.



Additional Information

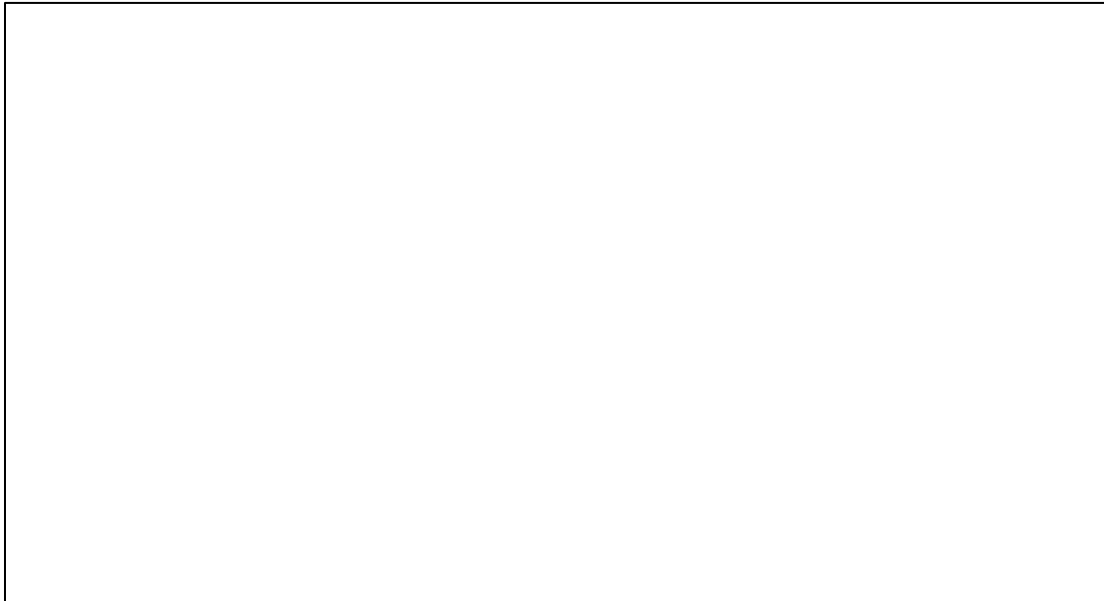
- The internal frame has no corner brace.
- The whole project uses only 2 x 4 or 50 x 100.

42. Create a cutting list for the above-mentioned project.

Parts	Quantity	Length	Width	Thickness	Total in Linear Meter
Legs					
Seat					
Back Rail					
Seat Rail					
Overall Total					

SL 4

43. The total cost for a 50 x 100 is \$30.00 per meter. Calculate the total cost of materials spent on a making the chair shown in the diagram (on page 16).

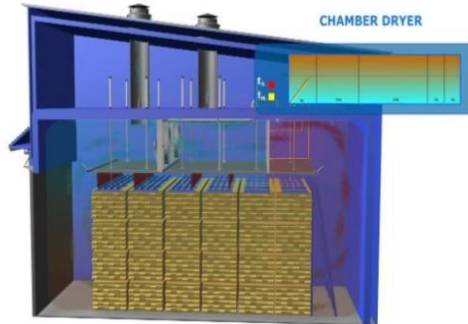


SL 3

44. Discuss why it is important to have a cutting list before the actual construction of a project. Use examples to support your answer.

SL 4

45. Name the type of timber seasoning shown in the picture below.



SL 1

46. Describe *re-forestation*.

SL 2

47. Explain, using examples, why using new technologies is essential for sustaining our forests.

SL 3

48. Discuss how a technology ruins the environment and its growth. Name the technology and use clear examples to support your discussion.

SL 4

STUDENT EDUCATION NUMBER									

DESIGN TECHNOLOGY

2022

(For Scorers only)

STRANDS		Weighting	Scores	Check Scorer	AED Check
STRAND 1	DESIGN PROCESS	25			
STRAND 2	TOOLS	15			
STRAND 3	MATERIALS	20			
STRAND 4	PROCESSES	30			
STRAND 5	TECHNOLOGY	10			
TOTAL		100			