



STUDENT EDUCATION NUMBER									

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# Samoa School Certificate

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# DESIGN TECHNOLOGY

# 2021

## 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. 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		Pages	Time (min)	Weighting
<b>STRAND 1</b>	DESIGNING AND DRAWING	2	35	14
<b>STRAND 2</b>	TOOLS	5	10	6
<b>STRAND 3</b>	MATERIALS – Wood Materials	6	40	24
<b>STRAND 4</b>	PROCESSES – Wood Processes	10	60	30
<b>STRAND 5</b>	TECHNOLOGY	15	20	14
<b>STRAND 6</b>	VOCABULARY	19	15	12
<b>TOTAL</b>			<b>180</b>	<b>100</b>

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.**

For Questions 1 and 2, choose and write the LETTER of the correct answer in the box provided.

1. Select the best solution at school to solve the problem with students having lunch by sitting on the ground during lunch break.

- A. Build individuals chairs.
- B. Students should bring chairs from home.
- C. Build outdoor benches.
- D. Order plastic chairs from SSAB.

	SL 1

2. Pick the problem to best solve the solution given below:

<b>Solution – ‘Build a Wooden Ali’</b>
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- A. In need of something soft to rest my head on when resting during the day.
- B. In need of something hard and light to rest my head on when resting during the day.
- C. In need of something watery to rest my head on when resting during the day.
- D. In need of something hard and heavy to rest my head on when resting during the day.

	SL 1

3. Write an instruction of a Safety procedure for everyone to follow in the workshop.

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SL 2

**Problem – “My father is tired of laying down on the floor every day and night. He needs something soft and raised off the ground to lay on because of his injured knees.”**

4. Write a Design Brief based on the given problem above. Provide a solution and specifications.

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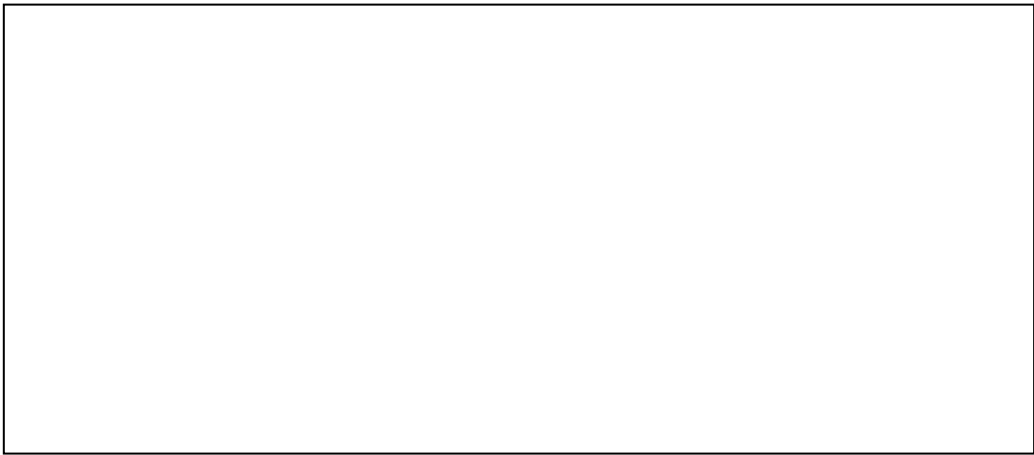
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SL 3

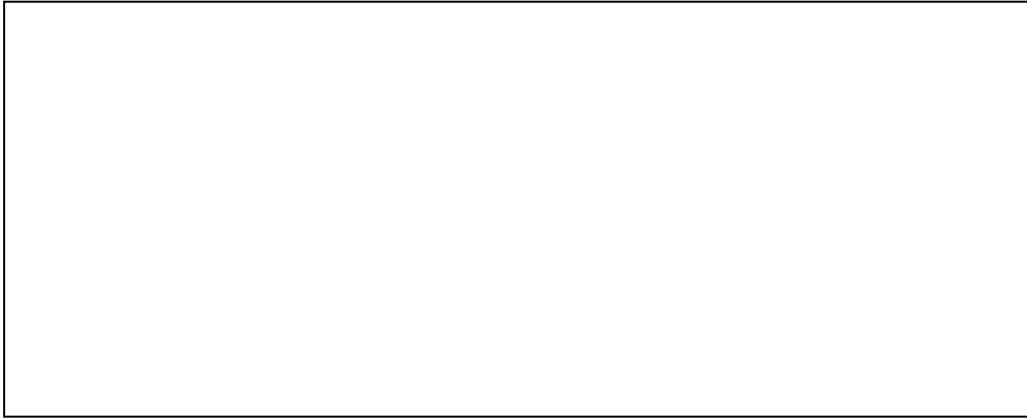
5. Draw three hand sketches for your solution provided in Question 4. Provide three main dimensions for your sketches.

(i)



SL 3

(ii)



(iii)



6. Discuss the term “specification” in relation to building a project.



SL 4

For Question 7, choose and write the LETTER of the correct answer in the box provided.

7. Which is the appropriate brush to use when applying wood stain?

- A. Paint Brush.
- B. Tooth Brush.
- C. Metal Brush.
- D. Cloth.

SL 1

8. State the function of a G Clamp.

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SL 2

9. Differentiate between a Sanding block and a belt sander.

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SL 3

For Questions 10 to 15, choose and write the LETTER of the correct answer in the box provided.

10. The process of passing minerals and water up to the leaves is called:

- A. photosynthesis.
- B. phloem.
- C. xylem.
- D. bark.

SL 1

11. The process of passing food and sugar to all parts of the tree is called:

- A. photosynthesis.
- B. phloem.
- C. xylem.
- D. bark.

SL 1

12. The part of a tree that protects it from outside forces is called:

- A. sapwood.
- B. pith.
- C. bark.
- D. layer.

SL 1

13. Name the part of the tree that store food.

- A. Pith
- B. Leaves
- C. Medullary Rays
- D. Branches

SL 1

14. Select the best definition of moisture content in timber.

- A. The amount of moisture added in the timber after seasoning.
- B. The amount of water should be in the timber after seasoning.
- C. The amount of water removing out from the timber.
- D. The amount of sun used for seasoning.

SL 1

15. Identify the right advantage of Nature Seasoning of timber.

- A. Cheap.
- B. Can season timber fast.
- C. It provides a warm air from the oven to season timber.
- D. Easy to monitor.

SL 1

**Describe features of the following Timber Defects. (Questions 16 and 17).**

16. Twist

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SL 2

17. Ring Shake

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SL 2

18. Explain the function of a Growth Ring.

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SL 3

19. Differentiate the quality of local and overseas timber.

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SL 3

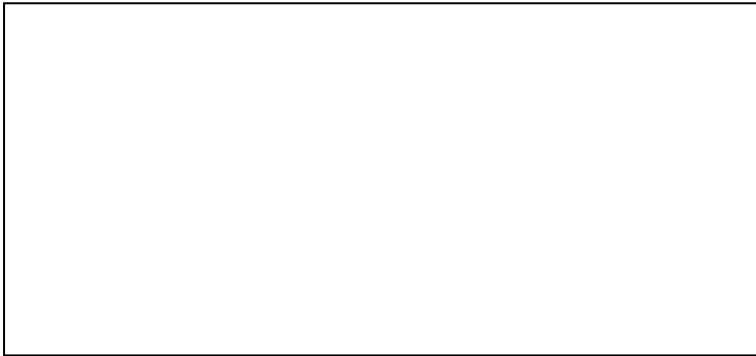




Answer ALL the following questions correctly.

Draw the following joints.(Questions 22 to 25)

22. Mitre Joint



SL 1

23. Corner Halving Joint



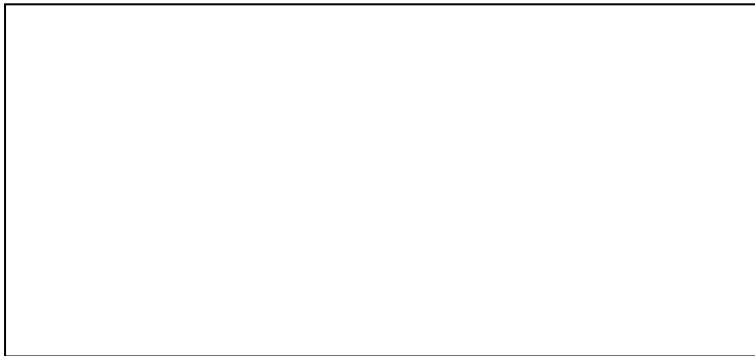
SL 1

24. Tongue and Groove Joint



SL 1

25. Biscuit Joint



SL 1

For Questions 26 to 28, choose and write the correct answer in the boxes provided.

26. Select the best tool for drawing straight lines along the timber.

- A. Mitre Square.
- B. Marking Gauge.
- C. Carpenter's Square.
- D. String Line.

SL 1

27. Circle the best method for removing hammer marks on a timber.

- A. Use a wet piece of cloth.
- B. Sand it with a sandpaper.
- C. Use a planer to remove it.
- D. String Line.

SL 1

28. Pick the best tool to check for squareness at.

- A. Mitre Square.
- B. Carpenter's Square.
- C. Water Level.
- D. Spirit Level.

SL 1

29. Describe a good trade practice.

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SL 2

30. Describe your own idea of checking the squareness of a project.

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SL 2

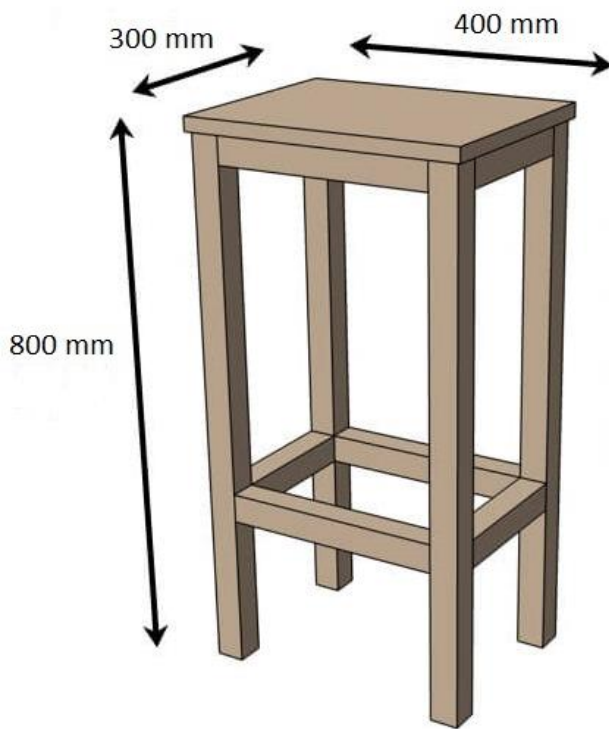
31. List TWO tools that you can use to check the vertical and plumb angle of a project or post.

A. \_\_\_\_\_

B. \_\_\_\_\_

SL 2

Use the diagram below to answer Questions 32 – 35.



Timber Sizes

Slat 1 x 6 / 25 x 150

Stool Frame 2 x 2 / 50 x 50

Joint Used: Butt Joint

32. Create a cutting list based on the Drawing above the information provided.

	No. of pieces	Length	Width	Thickness	Total
Slats					
Rails					
Legs					

SL 4

33. Calculate the total lengths of material needed for the project when placing an order at Bluebird Lumber based on the information provided in Question 32.

SL 3

34. The cost for a 50 x 150 at Bluebird is \$6.41 per meter and \$4.60 for a 50 x 50 per meter. Do a costing for the materials needed for the bed (page 13) not including screws, varnish, glue and nails.

SL 3

35. Explain the process of making a Corner Halving Joint.

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SL 3

36. Discuss the importance of cleaning up after practicals at school.

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SL 4

For Questions 37 and 38, choose and write the LETTER of the correct answer in the box provided.

37. What is the advantage of using timber in building and construction?

- A. Can withstand heavy loads in building.
- B. Cheap and easy to work with.
- C. Available at all times.
- D. Hard to cut or break.

SL 1

38. Which definition best describe the term technology in building?

- A. To make our work easier and fast.
- B. To give us cell phones to call the company.
- C. To record data in the company.
- D. Use for travelling.

SL 1

39. Describe the use of a Coping Saw.

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SL 2







**Define the following terms:**

43. 1<sup>st</sup> Angle Projection

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SL 1

44. 3<sup>rd</sup> Angle Projection

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SL 2

45. Orthographic Drawing

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SL 2

46. Write a simple Safety Instruction for everyone to follow during practical in the workshop.

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SL 2

47. Make a sentence using the term Technology.

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SL 3

48. Write down the evaluation of your independent project at school, the evaluation should include in difficulties and the work flow of your building.

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SL 4

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## DESIGN TECHNOLOGY

2021

*(For Scorers only)*

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