STUDENT EDUCATION NUMBER

Samoa National Junior Secondary 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. 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
STRAND 1	DESIGN PROCESS	2-5	40	25
STRAND 2	DRAWING	6-7	30	15
STRAND 3	TOOLS	8-9	30	15
STRAND 4	MATERIALS	10-11	30	15
STRAND 5	PROCESS	12-15	40	25
STRAND 6	TECHNOLOGY	16	10	5
	TOTAL		**180**	**100**

Check that this booklet contains pages 2-17 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 to 3, write the LETTER of the correct answer in the box provided.

1.   The correct sequence for the 'design process' is:

         A.   Investigation, Designing, Evaluation and Producing.

         B.   Investigation, Producing, Designing and Evaluation.

         C.   Investigation, Designing, Producing and Evaluation.

         D.   Investigation, Evaluation, Designing and Producing.

	SL 1

2.   What is a Design Brief?.

         A.   Short statements explaining a complaint made.

         B.   Short Statement explaining a gift for someone.

         C.   Short statement explaining the incident happen.

         D.   Short statement explaining in details what is going to be built.

	SL 1

3.   Which of the following is the correct process for the Design Brief?

         A.   Problem, Solution and Specification.

         B.   Problem, specification and Solution.

         C.   Specification, Solution and Problem.

         D.   Solution, Problem and Specification.

	SL 1

4.   Write a design problem you did in the Design and Technology Class.

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	SL 2

5. Describe the design solution for the problem you wrote about in Question 4.

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| SL 2 |
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6. Describe the role of specification of a building.

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| SL 2 |
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7. List TWO specifications for a project.

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| SL 2 |
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8.   Explain the Close Specification in relation to project build.

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SL 3

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9.   Explain the Open Specification in relation to project build.

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SL 3

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10.   Compose a set of specifications for the solution you stated in Question 5.

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SL 4

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11. Discuss the criteria that could be used to evaluate the design of an independent project.

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SL 4

12.   Define the term **hidden line**.

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SL 1

13.   Describe the main purpose of construction lines in a drawing.

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SL 2

14.   List TWO instruments used in drawing.

   A. _____

   B. _____

SL 2
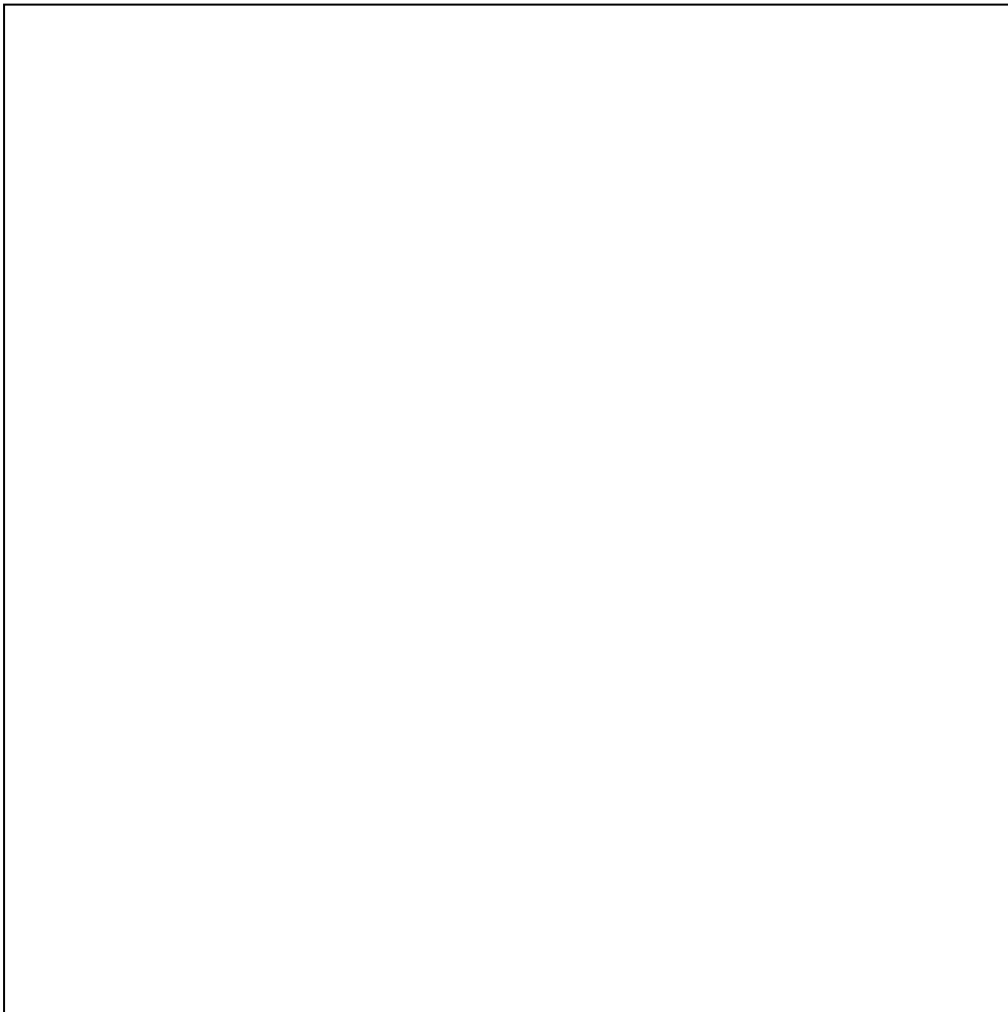
15.   Explain why a plan must be drawn first before construction.

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SL 3

16. Explain the main purpose of using a scale in a drawing.

SL 3	

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17. Draw ONE sketch for your independent project at school with measurements.

SL 4	

For Questions 18 – 20, state what the following tools are used for.

18. Chisel

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SL 1

19. Claw Hammer

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SL 1

20. Tape Measure

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SL 1

21. Describe the main function of a jigsaw.

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SL 2

22. Explain the safety procedure when operating a router.

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SL 3

23.   Explain the best way to maintain the brace for a long period of time.

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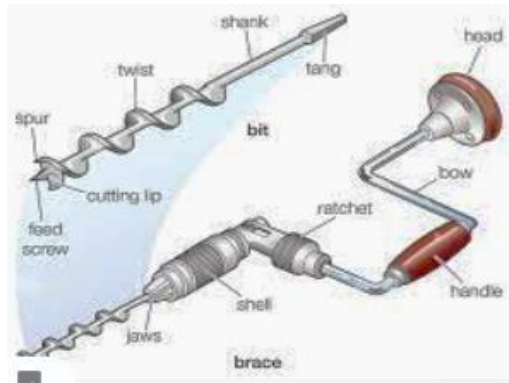
24.   Discuss the usage of hand tools and power tools.

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For Questions 25 and 26, write the LETTER of the correct answer in the box provided.

25. What is the BEST chemical used to treat timber?

    A.   Round Up

    B.   Sodium Hydroxide

    C.   Alkaline Copper Quaternary

    D.   Bleach

    SL 1

26. Wood conversion is the process of:

    A.   seasoning of wood.

    B.   converting timbers into defects.

    C.   cutting timber into different logs sizes.

    D.   splitting a log of wood into different sizes of timber for construction work.

    SL 1

27. Describe ONE property of Timber.

    _____

    _____

    _____

    _____

    _____

    SL 2

28. List TWO sizes of timber materials you work with or studied at school

    A.   _____

    B.   _____

    SL 2

29.   Explain how timber is graded.

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_____ | **SL 3** |
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30.   Explain why timber is treated with chemical before use.

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_____ | **SL 3** |
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31.   Explain in your own words the quality of local timber.

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_____ | **SL 3** |
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For Questions 32 – 34, define the following joints in your own words.

32.

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SL 1

33.

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SL 1

34.

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SL 1

35. Describe the application of a stain on a project.

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36. Explain how a tongue and groove joint is made.

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37. List TWO ways you can use to remove any hammer marks on a timber.

A. _____

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B. _____

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38.   Describe the most effective way to square a project.

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39.   Describe ONE material that is used for hanging doors.

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40.   Calculate the following measurements into metric or imperial measurements.
       Show calculation for your work.

        A. Convert inches into millimetres

            12" = _____ mm

        B. Convert millimetres into inches

            975mm = _____"

        C. Convert feet into millimetres

            3' = _____mm

Use the information below to answer Questions 41 and 42.

> The measurements for a table top are 50mm x 1200mm x 3000mm (thickness x width x length) and the client wants to use timber for the project.

41.   Arrange a cutting list for the above information.

Aspects	Quantity	Thickness	Width	Length	Total linear meters

SL 3

42.   The total cost for a 2 x 8 x 20' is $145.00 and a 2 x 4 x 20' is $69.50.

Calculate the total cost of materials spent on the table top.

SL 4

STRAND 6:   **TECHNOLOGY**   **WEIGHTING 5**

43.   List **TWO** technologies that you have used to make your work easier in the workshop.

SL 2

   A.   _____

   B.   _____

44.   Explain the impact of technologies in building and construction.

SL 3

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STUDENT EDUCATION NUMBER

DESIGN TECHNOLOGY

2021

(For Scorers only)

STRANDS		Weighting	Scores	Check Scorer	AED Check
STRAND 1	DESIGN PROCESS	25			
STRAND 2	DRAWING	15			
STRAND 3	TOOLS	15			
STRAND 4	MATERIALS	15			
STRAND 5	PROCESS	25			
STRAND 6	TECHNOLOGY	5			
TOTAL		**100**			