FUKIEN SECONDARY SCHOOL
S1 First Term Uniform Test (2020-2021)
Mathematics
(1 hour)

Date : 21st October 2020 Name:_____

Time: 9:45 a.m. – 10:45 a.m. Class: _____ No.: _____

Instructions to students:

1. This paper consists of THREE parts, Conventional Questions, Multiple-choice Questions and Bonus Questions. There are Section A and Section B in Conventional Questions. Section A carries 39 marks, Section B carries 15 marks, Multiple-choice Questions carry 14 marks and Bonus Questions carry 6 marks.

2. The maximum score of this paper is 68 .

3. Attempt ALL the questions in this paper. Write your answers in the spaces provided in this Question / Answer Book.

4. Unless otherwise specified, show your workings clearly.

5. Unless otherwise specified, numerical answers should be exact.

Section A (39 marks)

1. (a) Arrange the following numbers in descending order.

$$-1.5\ ,\ 3.5\ ,\ 3\ ,\ 0\ ,\ -2$$

(b) Arrange the following numbers in ascending order.

$$-1\frac{2}{3}\ ,\ -1\ ,\ -\frac{2}{3}\ ,\ \frac{2}{3}\ ,\ 0$$

(2 marks)

……

……

……

2. Evaluate each of the following expressions.

(a) $(-8) - (+9)$ (b) $\frac{2}{3} + \frac{5}{6} - \frac{7}{12}$

(c) $\frac{5}{16} \div 4\frac{3}{8}$ (d) $5 \times [45 - (23 - 8)] \div 2$

(8 marks)

……

……

……

……

……

……

……

……

……

3. Find the H.C.F. of 36, 72 and 90 by using prime factorization.

(3 marks)

……

……

……

……

……

……

4. Find the L.C.M. of 16, 24 and 30 by using prime factorization.

(3 marks)

……

……

……

……

……

……

……

……

……

5. For the algebraic expression $-2 + 3x - 4y + 5x + 6y - 7y$, write down
   (a) the constant term,
   (b) all the like terms.

(3 marks)

……

……

……

……

6. Simplify the following expressions.
   (a) $8x + 7x - 8 + 6x - 5$
   (b) $-m + 3mn^2 + 5m + 8mn^2 - 6m - 7$
   (c) $5b \times 2a \div 4 \times 3a \times b \times 2$

(6 marks)

……

……

……

……

……

……

……

……

7. Write down the missing terms of each of the following sequences.

(a) 1 , 5 , 9 , 13 , 17 , 21 , _____ , _____

(b) 60 , 51, 42 , 33 , _____ , _____, 6

(c) _____, –6 , 12 , –24 , 48 , – 96 , _____

(6 marks)

8. It is given that $G = \frac{ab}{c^2 + 2}$. If $a = 3$, $b = 4$ and $c = 5$, find the value of G.

(3 marks)

……

……

……

……

……

9. Assume that –$1000 means a loss of $1000 last month. The following table shows the profit or loss made by 6 stores last month.

Store	Situation	Profit / Loss
A	A profit of $70 000 was made.	
B		–$3800
C		+$12 800
D	No profit or loss was made.	
E		–$50 000
F	A loss of $15 000 was made.	

(a) Complete the above table.

(b) (i) Which stores had losses last month?

(ii) Among the stores that had losses, which store made the smallest loss last month?

(5 marks)

……

……

……

……

……

……

……

……

Section B (15 marks)

10. The production cost ($\$C$) of an action figure in a factory is given by the formula $C = 50 + \frac{3600}{n}$, where n is the number of action figures produced. It is given that 120 action figures were produced in the factory last week.

(a) Find the production cost of each action figure.

(b) The number of action figures produced is doubled this week. The manager of the factory claims the production cost of each action figure decreased by \$15. Is the claim correct? Explain your answer.

(6 marks)

……

……

……

……

……

……

……

……

……

……

……

……

……

……

……

……

……

……

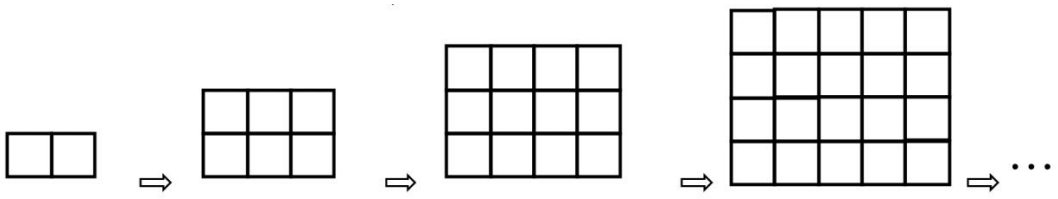
……

……

……

……

11. (a) The following figures are formed by small squares.



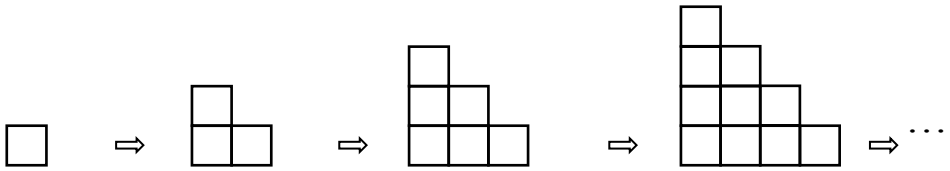
(i) Complete the following table.

Figure	1st	2nd	3rd	4th	5th	6th
Number of small squares	2	6	12			

(ii) Write down the number of small squares in the n-th figure.

(iii) Hence, or otherwise, find the number of small squares in the 100th figure.

(b) Now, consider the following figures formed by small squares.



(i) What kind of sequence do the numbers of small squares in the figures form?

(ii) Using the result of (a), find the number of small squares in the 50th figure in the new sequence.

(9 marks)

……

……

……

……

……

……

……

……

……

……

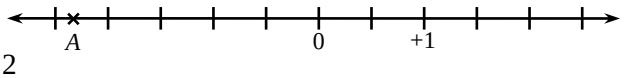
……

……

Multiple-choice Questions (14 marks)
Each question carries 2 marks. Write down the correct answers in the boxes.

12	13	14	15	16	17	18

12. Which number may the letter *A* on the following number line represent?



A. $-2\frac{2}{5}$

B. $-2\frac{5}{8}$

C. $-1\frac{7}{10}$

D. $-1\frac{6}{13}$

13. $2^3 \times 3^2 =$

A. 18
B. 24
C. 36
D. 72

14. The following shows the short division of three numbers 48, 72 and 108.

2	48	72	108
2	24	36	54
3	12	18	27
2	4	6	9
3	2	3	9
	2	1	3

Which of the following is true?

A. 8 is a common factor of the three numbers.
B. $2^4 \times 3^2$ is the L.C.M. of the three numbers.
C. 1296 is a common multiple of the three numbers.
D. 48 is the H.C.F. of the three numbers.

15. Which of the following is/are prime number(s)?
    I. 1
    II. 105
    III. 227
    A. I only
    B. III only
    C. II and III only
    D. all of the above

16. If an integer is divisible by both 4 and 6, then which of the following must be true?
    I. The sum of all the digits of the integer is divisible by 2.
    II. The sum of all the digits of the integer is divisible by 3.
    III. The sum of all the digits of the integer is divisible by 6.
    A. I only
    B. II only
    C. I and III only
    D. II and III only

17. Which of the following numbers is divisible by 4?
    A. 468
    B. 523
    C. 642
    D. 850

18. Consider the integer 1▲▲8, where ▲ represents a number between 0 and 9. If the integer is divisible by both 8 and 9, then which of the following is the value of ▲?
    A. 0
    B. 4
    C. 8
    D. 9

Bonus Questions (6 marks)

19. How many integers between 1 and 2020 are divisible by 3 but not by 5? Explain your answer briefly.

(3 marks)

20. Is the number

45 143 979 778 554 096 543 676 876 543 987 398 048 001 120 020 142 512

divisible by 72? Explain your answer briefly.

(3 marks)

END OF PAPER