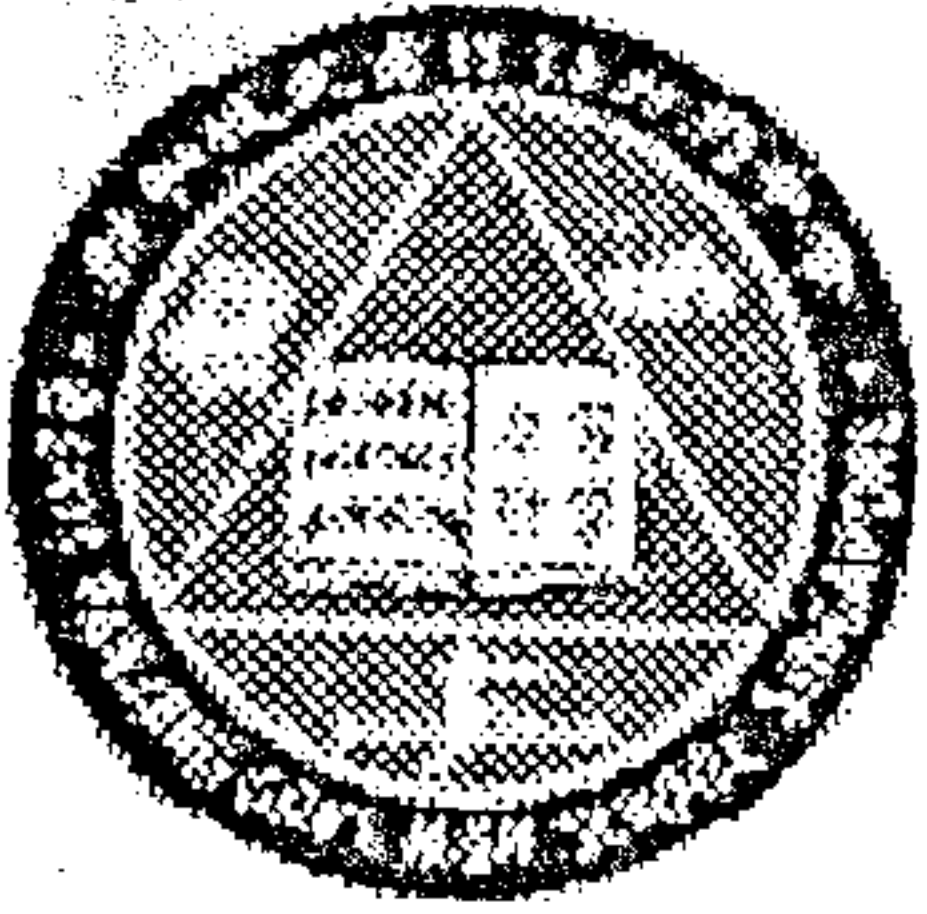


Candidate's Name _____ Class _____ Index No _____



BUKIT PANJANG GOVERNMENT HIGH SCHOOL
MID YEAR EXAMINATIONS
SECONDARY ONE EXPRESS NORMAL ACADEMIC

MATHEMATICS
PAPER

Date May

Duration hour

Time

INSTRUCTION TO CANDIDATES

Write your name and register number in the spaces at the top of this page

Answer **ALL** questions in the space provided

If working is needed for any question it must be shown below that question
Omission of essential working will result in loss of marks

Calculators are **NOT** allowed in this paper

INFORMATION FOR CANDIDATES

The number of marks is given in brackets at the end of each question or part question

The total marks for this paper

You should not spend too much time on any one question

For examiner's use

/ 50

This paper consists of 7 pages

[TURN OVER]

Answer **all** questions in this paper. Calculators are **not** allowed.
All essential working and steps must be clearly shown.

1. (a) Round off 777 479 to the nearest 100.
(b) Round off 32 876 099 to the nearest 10 000.

Answer: (a) _____ [1]

(b) _____ [1]

2. Find the LCM of 104, 56 and 72.

Answer: _____ [2]

3. Using prime factorisation, find the square root of 2025.

Answer: _____ [3]

4. Write down the next two terms of the following sequences:

(a) 11, 13, 16, 20, _____, _____

(b) 169, 144, 121, 100, _____, _____

Answer: (a) _____, _____ [2]

(b) _____, _____ [2]

5. Express the following numbers correct to 4 significant figures.

(a) 168.0489

(b) 0.00608739

Answer: (a) _____ [1]

(b) _____ [1]

6. Evaluate

(a) $(-9 \times 5) - 9 - (-14 + 6)$

(b) $-4\frac{1}{3} + 3\frac{1}{2} \times (-\frac{1}{6})$

Answer: (a) _____ [2]

(b) _____ [2]

7. Write down the perfect squares between 30 and 60.

Answer: _____ [1]

8. Estimate the value of $\frac{9.734 \times 0.2106}{0.0229 \times \sqrt{24.778}}$ to 1 significant figure.

Answer: _____ [2]

9. Given that $548 \times 5.5 = 3014$, find the value of

(a) 5.48×0.055

(b) $301\,400 \div 55$

Show your working clearly.

Answer: (a) _____ [2]

(b) _____ [2]

8. Given that $a = 2$, $b = -3$ and $c = -1$, evaluate $\frac{ac - 3b^2}{(a + 3b)^2}$

Answer: _____ [2]

9. Simplify each of the following

(a) $6a - 5b + 3 - a + 9$

(b) $-81v \div (-9) + 3v$

Answer: (a) _____ [2]

(b) _____ [2]

10. Expand each of the following

(a) $6(2a + b) - 3(a - 5b)$

(b) $-3[6y - 2(2x - 3y)]$

Answer: (a) _____ [2]

(b) _____ [3]

11. Factorise

(a) $12x - 8y + 20z$

(b) $5m(x+3y) + 10p(x+3y)$

(c) $11p - pq + qx - 11x$

Answer: (a) _____ [2]

(b) _____ [2]

(c) _____ [3]

12. The sum of three consecutive, even numbers is 210. Let n be the smallest of the 3 numbers. Form an equation, solve it and find the largest of these 3 numbers.

Answer: _____ [3]

13. Solve the following equations

(a) $8x + 4 = 3x - 7$

(b) $\frac{2y + 3}{3} = \frac{3y - 15}{11}$

Answer: (a) _____ [2]

(b) _____ [3]

END OF PAPER 1

BUKIT PANJANG GOVT HIGH SCHOOL
MidYear Exam 2007
Secondary 1 Exp/N(A)
Maths Paper 1

ANSWERS

1a) 777 500
b) 32 880 000

2) 6552

3) 45

4a) 25, 31
b) 81, 64

5a) 168.0
b) 0.006087

6a) -46
b) $-\frac{59}{12}$

7) 36, 49

8) 20

9a) 0.3014
b) 5480

10a) $-\frac{29}{49}$

11a) $5a-5b+12$
b) $12v$

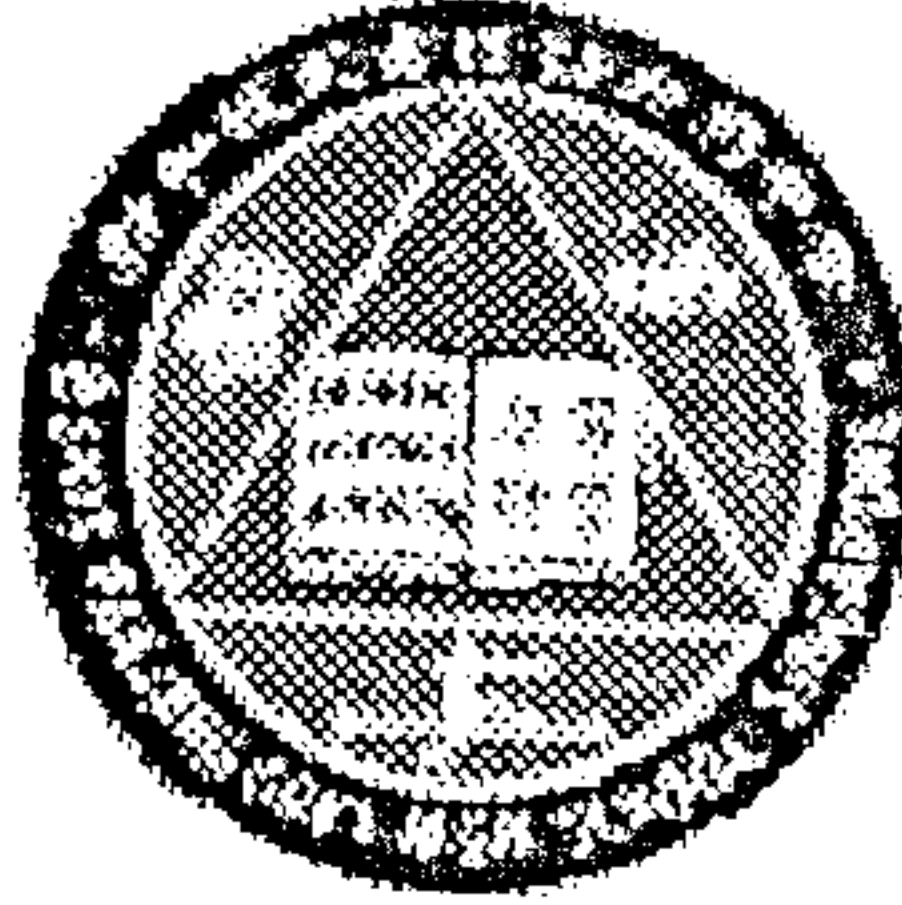
12a) $9a + 21b$
b) $-36y+12x$

13a) $4(3x-2y+5z)$
b) $5(x+3y)(m+2p)$
c) $(q-11)(-p+x)$

14) 72

15a) $-\frac{11}{5}$ b) $\frac{81}{13}$

Candidate's Name _____ Class _____ Index No _____



BUKIT PANJANG GOVERNMENT HIGH SCHOOL
SECONDARY ONE EXPRESS
MID-YEAR EXAMINATIONS 2007

MATHEMATICS
PAPER 2

Date : 08/05/2007

Duration: 1 hour 15 mins

Time : 1040 - 1155

INSTRUCTIONS TO CANDIDATES:

Write your answers and workings on the spaces provided on the question paper.

Omission of essential working will result in loss of marks.

Calculators are allowed in this paper.

ANSWER ALL THE QUESTIONS

INFORMATION FOR CANDIDATES:

The number of marks is given in brackets [] at the end of each question or part question.

The total of the marks for this paper is 50.

You are expected to use an electronic calculator to evaluate explicit numerical expression.

If the degree of accuracy is not specified in the question, and if the answer is not exact, give the answer to three significant figures.

Give answers in degrees to one decimal place.

This page consists of 7 pages.

[Turn Over]

Answer **ALL** the questions

1. a) Given that the HCF of 42, x and 126 is 42 and their LCM is 252, find the smallest possible value of x .
- b) Find the sum of all prime numbers between 40 and 60.

Answers: a) _____ [3]

b) _____ [2]

2. Evaluate the following correct to 3 significant figures where necessary.

a)
$$\frac{\sqrt{134} - \sqrt[3]{-352}}{(-3.4)^2 + (-0.95)^3}$$

b)
$$(-5.43)^3 + \left[3.22 - \left(\frac{1}{5} - \frac{4}{19} \right)^2 \right]$$

Answers: a) _____ [2]

b) _____ [2]

3. Arrange the following in **descending order**.

$$-3\frac{1}{4} - \left[\frac{2}{3} \times \left(-\frac{9}{10}\right)\right], \quad \sqrt{16^2 + 8^3 + 4^2}, \quad \sqrt[3]{(9^3 - 13^2) \div \sqrt{16} - \sqrt{225}}$$

Answer: _____ [3]

4. a) Find the sum of $\frac{1}{2} + 1 + 1\frac{1}{2} + 2 + 2\frac{1}{2} + 3 + \dots + 19\frac{1}{2} + 20$.

b) Hence or otherwise, find the sum of $\frac{1}{2} + 1 + 1\frac{1}{2} + 2 + 2\frac{1}{2} + 3 + \dots + n$, where n is a whole number.

Answers: a) _____ [3]

b) _____ [3]

5. If $x^3 + x^2 + x + 1 = 0$, what is the value of $x^{97} + x^{98} + x^{99} + x^{100} + x^{101} + x^{102} + x^{103} + x^{104}$?

Answers: _____ [3]

6. Simply the following expressions.

a) $3a^2 - (2ab + 7c) - a(5a - 3b) + c$

b) $15x - \{9x - [8y - 2(x - 3y)]\}$

Answers: a) _____ [2]

b) _____ [3]

7. Express the following as a single fraction.

$$\frac{3x+y}{5} - \frac{8x-3y}{2} + \frac{2y-7x}{3}$$

Answers: _____ [3]

8. a) Solve the equation $\frac{2(x+1)}{3} - \frac{x-2}{4} = \frac{x}{6}$

b) If $h = \frac{h^2 + fk}{hk + fh}$, find the value of k when $h = 6$ and $f = -4$.

Answers: a) _____ [3]

b) _____ [3]

9. A motorist travelled from Town X to Town Y at an average speed of 90 km/h. After travelling $\frac{1}{3}$ of the journey in 45 minutes, he continued to travel another 120 km to reach Town Y.

Find,

- a) the distance between Town X and Town Y,
- b) the time taken for the second part of the journey,
- c) his average speed for the second part of his journey.

Answers: a) _____ [1]

b) _____ [2]

c) _____ [1]

10. Siti has three pieces of ribbon with lengths of 112 cm, 64 cm and 96 cm. She wishes to cut the three pieces of ribbon into smaller pieces of equal length with no remainders.

- a) What is the greatest possible length of each of the smaller pieces of ribbon?
- b) What is the total number of pieces of ribbon in the end?

Answers: a) _____ [2]

b) _____ [2]

11. A coffee powder wholesaler makes his own blend of coffee by mixing 35 kg of type A coffee powder, 25 kg of type B coffee powder and 10 kg of type C coffee powder together. The total cost of the coffee mixture is \$560 and the wholesaler sell the mixture at a profit of \$1.80 per kg.

a) Given that the coffee mixture is packed and sold in bags of each weighing 2 kg and the wholesaler provides free delivery service if a customer's order is above \$600,

Calculate,

- i) the selling price of a bag of mixture,
- ii) the minimum number of bags of coffee mixture that a customer has to order for his goods to be delivered free of charge.

b) If the cost per kg of type A is half that of type B and \$0.90 per kg cheaper than type C. By letting the cost price per kg of the type A coffee powder be \$x, form an equation in x and hence solve for x.

Answers: a) i) _____ [2]

ii) _____ [2]

b) _____ [3]

Answers:

1 a) 84 b) 351

2 a) 1.50 b) -157

3 $\sqrt{16^2 + 8^3 + 4^2}$, $\sqrt[3]{(9^3 - 13^2) \div \sqrt{16} - \sqrt{225}}$, $-3\frac{1}{4} - \left[\frac{2}{3} \times \left(\frac{9}{10} \right) \right]$

4a) 410 b) $\frac{2n^2 + n}{2}$

5 0

6a) $-2a^2 + ab - 6c$ b) $4x + 14y$

7 $\frac{-172x + 71y}{30}$

8a) $-\frac{14}{3}$ b) $4\frac{1}{2}$

9 a) 180km b) 1.25hrs c) 96km/h

10a) 16 b) 17

11ai) \$19.60 ii) 3 bags b) \$5.80