DULWICH COLLEGE | SHANGHAI |
上海德威英国国际学校

YEAR 9 REGULAR PROGRAMME

MODULE 1 – END OF TOPIC TEST
END OF MODULE TEST 2015

The Use of A Calculator Is Permitted – Time: 50 Minutes (Total Marks: 55)

Q1 Work out $13 + 5 \times 4 - 2$.
Write down all the steps of your working.

Answer(b) ..... [1]

Q2 **(a)** Write down in figures the number twenty thousand three hundred and seventy six.

Answer(a) ..... [1]

(b) Write your answer to **part (a)** correct to the nearest hundred.

Answer(b) ..... [1]

Q3 **(a)** Write 1738.279 correct to 1 decimal place.

Answer(a) ..... [1]

(b) Write 28 700 in standard form.

Answer(b) ..... [1]

(c) The mass of a ten-pin bowling ball is 7 kg to the nearest kilogram.

Write down the lower bound of the mass of the ball.

Answer(c) ..... kg [1]

Q4 Write down the next term in each sequence.

(a) 1, 2, 4, 8, 16, ... [1]

(b) 23, 19, 15, 11, 7, ... [1]

Q5 Write down the time and date which is 90 hours after 20 30 on May 31st.

Answer Time .....

Date ..... [2]

Q6 Insert $<$ or $>$ or $=$ in the spaces provided to make correct statements.

(a) $\frac{3}{11}$ ..... 0.273 [1]

(b) 1.1 ..... 111% [1]

Q7 **(a)** Write 67.499 correct to the nearest integer.

Answer(a) ..... [1]

(b) Write 0.003040506 correct to 3 significant figures.

Answer(b) ..... [1]

(c) $d = 56.4$, correct to 1 decimal place.

Write down the lower bound of d.

Answer(c) ..... [1]

Write 0.0584 in standard form.

Answer(b) ..... [1]

Q8

$$\frac{9.6 \times 7.8 - 0.53 \times 86}{4.95}$$

(a) **(i)** Rewrite this calculation with each number written correct to 1 significant figure.

Answer(a)(i)

[1]

(ii) Work out the answer to your calculation in **part(a)(i)**.
Do not use a calculator and show all your working.

Answer(a)(ii) ..... [2]

(b) Use your calculator to work out the correct answer to the original calculation.

Answer(b) ..... [1]

Q9

(a) Find the lowest common multiple of 7 and 9.

Answer(a) ..... [1]

(b) Without using a calculator, work out $\frac{8}{9} - \frac{5}{7}$, leaving your answer as a fraction.

You must show all your working.

Answer(b) ..... [2]

Q10

(a) Write in the missing number. $\frac{5}{6} = \frac{\ldots}{18}$

[1]

(b) Without using your calculator and writing down all your working, show that

$$1\frac{2}{9} - \frac{5}{6} = \frac{7}{18}.$$

Answer(b)

[2]

Q11

(a)

$\frac{2}{3}$ 2 3 3.14 $\sqrt{35}$ 10 24 37 45 88

From the list of numbers above choose one that is

(i) an irrational number, *Answer(a)* (i) ..... [1]

(ii) the cube root of 27, *Answer(a)* (ii) ..... [1]

(iii) a multiple of 9, *Answer(a)* (iii) ..... [1]

(iv) a prime number, *Answer(a)* (iv) ..... [1]

(v) a factor of 44, *Answer(a)* (v) ..... [1]

(vi) the product of 6 and 4. *Answer(a)* (vi) ..... [1]

(b) Write down 40 as a **product** of prime numbers.
(1 is not a prime number.)

Answer(b) 40 = ... [2]

(c) Three pairs of prime numbers have a **sum** of 40.

One pair is 3 and 37.

Find the other two pairs.

Answer(c) ..... and .....

..... and ..... [2]

Q12

Work out $2.6 \times 10^{-3} + 9.1 \times 10^{-4}$.
Write your answer in standard form.

Answer ..... [2]

Q13

The length of a mirror is 15.6 centimetres correct to the nearest millimetre.
Complete the statement below about the length of the mirror.

Answer ..... cm $\leqslant$ length $<$ ..... cm [2]

Insert brackets to make the following statement correct.

$$2 \times 3 - 4 + 5 = 3$$ [1]

Complete the below table

Fraction	Decimal	Percentage
$\frac{1}{2}$		
	0.75	
		30%
$\frac{3}{100}$		
		$33\frac{1}{3}\%$
	0.625	

[6]

Q14

Diagram 1 Diagram 2 Diagram 3 Diagram 4 Diagram 5

The Diagrams above form a pattern.

(a) Draw Diagram 5 in the space provided. [1]

(b) The table shows the numbers of dots in some of the diagrams.
Complete the table.

Diagram	1	2	3	4	5		10		*n*
Number of dots	3	5							

[5]

(c) What is the value of *n* when the number of dots is 737?

Answer(c) ..... [2]

END OF TEST

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YEAR 9 REGULAR PROGRAMME

MODULE 1 – END OF TOPIC TEST
END OF MODULE TEST 2016

The Use of A Calculator Is Permitted – Time: 50 Minutes (Marks 57)

Q1 Work out $13 + 5 \times 4 - 2$.
Write down all the steps of your working.

Answer(b) • 31 ..... [1]

Q2 **(a)** Write down in figures the number twenty thousand three hundred and seventy six.

Answer(a) • 20376 ..... [1]

(b) Write your answer to **part (a)** correct to the nearest hundred.

Answer(b) • 20400 ..... [1]

Q3 **(a)** Write 1738.279 correct to 1 decimal place.

Answer(a) • 1738.3 ..... [1]

(b) Write 28 700 in standard form.

Answer(b) • 2.87×10^4 ..... [1]

(c) The mass of a ten-pin bowling ball is 7 kg to the nearest kilogram.

Write down the lower bound of the mass of the ball.

Answer(c) • 6.5 ..... kg [1]

Q4 Write down the next term in each sequence.

(a) 1, 2, 4, 8, 16, ... 32 ..... [1]

(b) 23, 19, 15, 11, 7, ... 3 ..... [1]

Q5 Write down the time and date which is 90 hours after 20 30 on May 31st.

Answer Time 1430hour (2.30pm)

Date ..... 4TH JUNE ..... [2]

Q6 Insert $<$ or $>$ or $=$ in the spaces provided to make correct statements.

0.272

(a) $\frac{3}{11}$ ..... < ..... 0.273 [1]

(b) 1.1 ..... < ..... 111% [1]

Q7 **(a)** Write 67.499 correct to the nearest integer.

Answer(a) ..... 67 ..... [1]

(b) Write 0.003040506 correct to 3 significant figures.

Answer(b) ..... 0.00304 ..... [1]

(c) $d = 56.4$, correct to 1 decimal place.

Write down the lower bound of d.

Answer(c) ..... 56.35 ..... [1]

Write 0.0584 in standard form.

Answer(b) ..... 5.84×10^{-2} ..... [1]

Q8

$$\frac{9.6 \times 7.8 - 0.53 \times 86}{4.95}$$

(a) (i) Rewrite this calculation with each number written correct to 1 significant figure.

Answer(a)(i) $\frac{10 \times 8 - 0.5 \times 90}{5}$ •

[1]

(ii) Work out the answer to your calculation in **part(a)(i)**.
Do not use a calculator and show all your working.

$\frac{80 - 45}{5}$ •

Answer(a)(ii) ..... • 7 ..... [2]

(b) Use your calculator to work out the correct answer to the original calculation.

Answer(b) • 5.919 ..... [1]

ACCEPT EQUIVALENT ROUNDED VALUE

Q9 **(a)** Find the lowest common multiple of 7 and 9.

Answer(a) ..... 63 ..... [1]

(b) Without using a calculator, work out $\frac{8}{9} - \frac{5}{7}$, leaving your answer as a fraction.

You must show all your working.

$\frac{8}{9} - \frac{5}{7}$ • Correct fractions over common denominator

$\frac{56}{63} - \frac{45}{63} = \frac{11}{63}$

Answer(b) • $\frac{11}{63}$ ..... [2]

Q10

(a) Write in the missing number. $\frac{5}{6} = \frac{15}{...}$

[1]

(b) Without using your calculator and writing down all your working, show that

$$1\frac{2}{9} - \frac{5}{6} = \frac{7}{18}.$$

Answer(b)

• Correct top heavy fraction

$\frac{11}{9} - \frac{5}{6}$

Correct common denominator leading to answer

$\frac{22}{18} - \frac{15}{18}$ • $= \frac{7}{18}$ proved

[2]

Q11

(a)

$\frac{2}{3}$ 2 3 3.14 $\sqrt{35}$ 10 24 37 45 88

From the list of numbers above choose one that is

(i) an irrational number, *Answer(a)* (i) • $\sqrt{35}$ [1]

(ii) the cube root of 27, *Answer(a)* (ii) • 3 [1]

(iii) a multiple of 9, *Answer(a)* (iii) • 45 [1]

(iv) a prime number, *Answer(a)* (iv) • 2 OR 37 [1]

(v) a factor of 44, *Answer(a)* (v) • 2 [1]

(vi) the product of 6 and 4. *Answer(a)* (vi) • 24 [1]

(b) Write down 40 as a **product** of prime numbers.
(1 is not a prime number.)

2	40
2	20
2	10
5	5
	1

• Valid Method

Answer(b) 40 = • $2^3 \times 5$ [2]

(c) Three pairs of prime numbers have a **sum** of 40.

One pair is 3 and 37.

Find the other two pairs.

Answer(c) • 11 and 29

• 17 and 23 [2]

Q12

Work out $2.6 \times 10^{-3} + 9.1 \times 10^{-4}$.
Write your answer in standard form.

Correct Mantissa + Exponent Correct

Answer 3.51×10^{-3} [2]

Q13

The length of a mirror is 15.6 centimetres correct to the nearest millimetre.
Complete the statement below about the length of the mirror.

Accuracy = 0.1
Error = ± 0.05

Answer 15.55 cm ⩽ length < 15.65 cm [2]

Insert brackets to make the following statement correct.

$2 \times (3 - 4) + 5 = 3$ [1]

Complete the below table

Fraction	Decimal	Percentage
$\frac{1}{2}$	0.5	50%
$\frac{3}{4}$	0.75	75%
$\frac{3}{10}$	0.3	30%
$\frac{3}{100}$	0.03	3%
$\frac{1}{3}$	$33.\dot{3}$	$33\frac{1}{3}\%$
$\frac{5}{8}$	0.625	$62\frac{1}{2}\%$

[6]

Q14

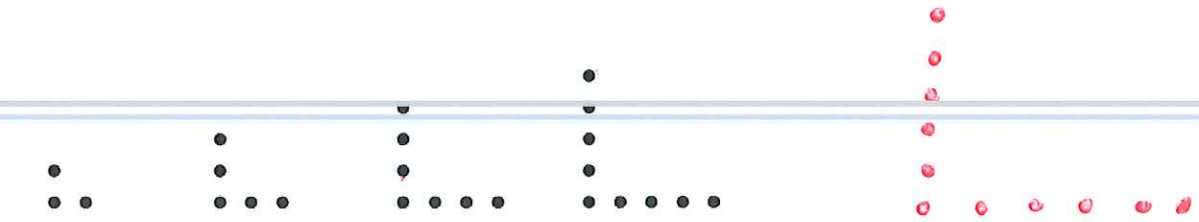

Diagram 1 Diagram 2 Diagram 3 Diagram 4 Diagram 5

• Mark

The Diagrams above form a pattern.

(a) Draw Diagram 5 in the space provided. [1]

(b) The table shows the numbers of dots in some of the diagrams.
Complete the table.

Diagram	1	2	3	4	5		10		n
Number of dots	3	5	7	9	11		21		$2n+1$

[5]

(c) What is the value of n when the number of dots is 737?

• Correct Strategy

$2n + 1 = 737$

$2n = 736$

$n = 368$

• Correct Answer

Answer(c) ..... 368 ..... [2]

(Award 2 Marks For CAO)

END OF TEST