



EP.M99 Decimal Place Value and Powers of Ten

GL ASSESSMENT GL-11PLUS-MATHS · Calculators not allowed · about 55 minutes

Total Marks

Name: _____ Date: ____ / ____ / ____

Answer ALL questions. Show all your working.

1 In the number 3.405, what is the value of the digit 4?

- ☐ A) 4
- ☐ B) 0.4
- ☐ C) 40
- ☐ D) 0.04
- ☐ E) 400

(Total for Question 1 is 1 mark)

2 Calculate 0.053 times 100.

- ☐ A) 0.53
- ☐ B) 5.3
- ☐ C) 0.0053
- ☐ D) 53
- ☐ E) 0.00053

(Total for Question 2 is 1 mark)

3 What is 12.34 divided by 10?

- ☐ A) 1.234
- ☐ B) 12.304
- ☐ C) 0.1234
- ☐ D) 123.4
- ☐ E) 0.01234

(Total for Question 3 is 1 mark)

4 Which of these is the largest number?

0.4, 0.39, 0.401, 0.399

(Total for Question 4 is 1 mark)

5 Calculate 7.005 multiplied by 1000.

- ☐ A) 7.005
- ☐ B) 700.5
- ☐ C) 70.05
- ☐ D) 7005
- ☐ E) 0.7005

(Total for Question 5 is 1 mark)

6 Write 1.2 correct to three decimal places.

- ☐ A) 1.200
- ☐ B) 1.020
- ☐ C) 1.002
- ☐ D) 1.20
- ☐ E) 1.000

(Total for Question 6 is 1 mark)

7 Calculate 0.089 divided by 1000.

- ☐ A) 0.000089
- ☐ B) 0.00089
- ☐ C) 0.0089
- ☐ D) 0.89
- ☐ E) 0.0000089

(Total for Question 7 is 1 mark)

8 Which digit is in the thousandths place in 4.206?

- ☐ A) 2
- ☐ B) 0
- ☐ C) 6
- ☐ D) 4
- ☐ E) There is no thousandths digit

(Total for Question 8 is 1 mark)

9 Calculate 0.345 multiplied by 100.

(Total for Question 9 is 2 marks)

10 Divide 45.6 by 100. Give your answer as a decimal.

(Total for Question 10 is 2 marks)

11 A cake recipe needs 0.125 kg of sugar for one cake. Calculate the mass of sugar needed for 100 cakes.

(Total for Question 11 is 2 marks)

12 Write 0.06 as a number of thousandths.

(Total for Question 12 is 2 marks)

13 Order these numbers from smallest to largest: 0.5, 0.47, 0.503

(Total for Question 13 is 2 marks)

14 Write 0.007 to the nearest thousandth.

(Total for Question 14 is 2 marks)

15 Multiply 0.6 by 10 and then divide the result by 100. Give your final answer as a decimal.

(Total for Question 15 is 2 marks)

16 A car uses 0.375 litres of oil for one service. (a) How many litres does it use for 10 services? (b) How many litres for 1,000 services?

(a) How many litres does it use for 10 services? (1)

(b) How many litres for 1,000 services? (2)

(Total for Question 16 is 3 marks)

17 Express 4.2 as a number of tenths and then as a number of hundredths.

(Total for Question 17 is 2 marks)

18 A chocolate bar costs £0.85. How much would 1,000 chocolate bars cost? Give your answer in pounds.

(Total for Question 18 is 2 marks)

19 Which of these numbers is the smallest?

0.305, 0.35, 0.3005, 0.3050

(Total for Question 19 is 1 mark)

20 Sonia has £12.345 in a savings pot. She withdraws £2.5, then adds £0.055. Work out her final balance to three decimal places.

(Total for Question 20 is 4 marks)

21 Order these numbers from largest to smallest: 0.123, 0.1205, 0.1230

(Total for Question 21 is 3 marks)

22 A small model weighs 0.0027 kg. How many such models weigh 1 kilogram? Give your answer as an integer.

(Total for Question 22 is 3 marks)

Mark scheme · EP.M99 Decimal Place Value and Powers of Ten

Question 1

- **B1** correct option B (0.4) cao
- **Answer: B) 0.4** (the 4 is in the tenths place: $4 \times 0.1 = 0.4$).

Question 2

- **B1** correct option B (5.3) cao
- **Answer: B) 5.3** (shift decimal 2 places right: $0.053 \rightarrow 5.3$).

Question 3

- **B1** correct option A (1.234) cao
- **Answer: A) 1.234** (shift decimal 1 place left).

Question 4

- **B1** correct option C (0.401) cao
- **Answer: C) 0.401** ($0.401 > 0.4$ because 0.401 has an extra thousandth).

Question 5

- **B1** correct option D (7005) cao
- **Answer: D) 7005** (shift decimal 3 places right).

Question 6

- **B1** correct option A (1.200) cao
- **Answer: A) 1.200**

Question 7

- **B1** correct option A (0.000089) cao
- **Answer: A) 0.000089** (shift decimal 3 places left).

Question 8

- **B1** correct option C (6) cao
- **Answer: C) 6** (4.206 has tenths=2, hundredths=0, thousandths=6).

Question 9

- **M1** multiply 0.345 by 100 (decimal moved 2 places)
- **A1** 34.5 cao
- **Answer: 34.5**

Question 10

- **M1** divide 45.6 by 100 (decimal moved 2 places left)
- **A1** 0.456 cao
- **Answer: 0.456**

Question 11

- **M1** multiply 0.125 by 100 (shift decimal 2 places)
- **A1** 12.5 kg cao
- **Answer: 12.5 kg**

Question 12

- **M1** convert 0.06 to thousandths by multiplying by 1000 or equivalent method
- **A1** 60 thousandths ($60/1000$) cao
- **Answer: 60 thousandths (60/1000)**

Question 13

- **M1** correct smallest and largest identified (0.47 and 0.503) oe
- **A1** complete order: 0.47, 0.5, 0.503 cao
- **Answer: 0.47, 0.5, 0.503**

Question 14

- **M1** identify thousandth place and consider following digit (here no following digit or zero)
- **A1** 0.007 cao
- **Answer: 0.007**

Question 15

- **M1** perform multiply by 10 then divide by 100 ($0.6 \times 10 = 6$; $6 / 100 = 0.06$)
- **A1** 0.06 cao
- **Answer: 0.06**

Question 16

- (a) **B1** 3.75 litres cao
- (a) **Answer: 3.75 litres**
- (b) **M1** multiply 0.375 by 1000 (shift decimal 3 places)
- (b) **A1** 375 cao
- (b) **Answer: 375 litres**

Question 17

- **M1** convert 4.2 to tenths or hundredths (showing method)
- **A1** 42 tenths and 420 hundredths cao
- **Answer: 42 tenths; 420 hundredths**

Question 18

- **M1** multiply 0.85 by 1000 (or shift decimal 3 places)
- **A1** £850.00 cao
- **Answer: £850.00**

Question 19

- **B1** correct option C (0.3005) cao
- **Answer: C) 0.3005 (this is the smallest because $0.3005 < 0.305$).**

Question 20

- **M1** subtract 2.5 from 12.345 (showing intermediate step)
- **M1** add 0.055 to result (intermediate step)
- **A1** 9.900 cao
- **A1** final answer given correct to three decimal places 9.900 cao
- **Answer: £9.900**

Question 21

- **M1** compare correct largest and smallest digits (recognise that 0.123 and 0.1230 are equal)
- **M1** place 0.1205 correctly between others
- **A1** complete correct order: 0.123, 0.1230, 0.1205 cao
- **Answer: 0.123, 0.1230, 0.1205**

Question 22

- **M1** form division $1 / 0.0027$ or convert to integer method ($1000 / 2.7$ then adjust)
- **M1** complete division to find 370.370... as repeating
- **A1** 370 models if asked for whole models that fit into 1 kg (or state 370 whole models cao)
- **Answer: 370 models** ($370 \times 0.0027 = 0.999$, 371 would exceed 1 kg)