



EXAMINATIONS COUNCIL OF ZAMBIA

GRADE SEVEN COMPOSITE EXAMINATION – 2017

Mathematics

SUBJECT 3/1

90 MINUTES

TD/M3/G7/2017

- 1 Read these instructions carefully.
- 2 **DO NOT** turn this page before you are told. Your teacher will tell you when to turn this page to begin the questions.
- 3 There are **60** questions in this **MATHEMATICS PAPER**. You will be given **EXACTLY 90 MINUTES** to do the questions.
- 4 For each question, four answers are given, but only one of the four is right. Work out which is the **BEST** answer. Then, on your **ANSWER SHEET**, mark the box completely by shading the answer space of the letter of your choice. If you had chosen answer **D** for a question, you would show it like this:-

A

B

C

- 5 You must **SHADE** your answer spaces **COMPLETELY** and **DARKLY** using an **HB** pencil. If you have to change your answer, you must rub out the shading **VERY NEATLY** before shading the new one. **USE A CLEAN RUBBER.**
- 6 When you have finished one page, go straight on without waiting to be told. If you have time left at the end of the question paper, use it to check your work carefully.
- 7 Look at your **ANSWER SHEET**. On the top left hand side are boxes which should have Examination Year, your School Number and Examination Number. It should also say **Subject 3 Paper 1.**
- 8 Look at your **ANSWER SHEET** again. At the bottom left hand side, it should have your Surname, Forename, Subject – **Mathematics**, Name of Primary School and your Secondary School of choice.
- 9 **PUT UP YOUR HAND NOW IF:**

You have any question.

You have the wrong answer sheet.

You will **NOT** be able to ask questions once the examination has begun.

DO NOT TURN THIS PAGE UNTIL YOU ARE TOLD.
USE ONLY AN HB PENCIL FOR YOUR ANSWERS.

This question paper consists of 12 printed pages.

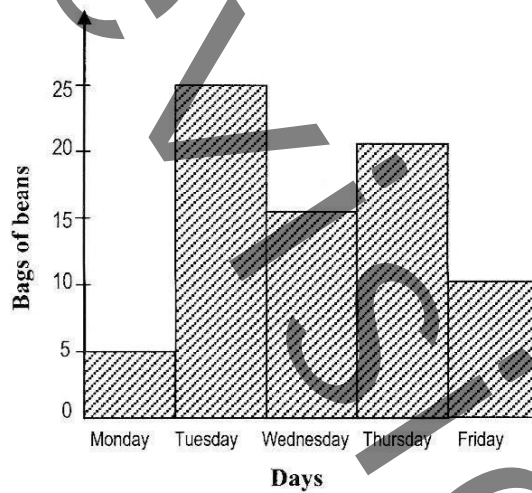
1 $731\,479 + 145\,832 =$

- A 876 201
- B 876 211
- C 877 301
- D 877 311

2 Given that $A = \{1, 2, 3, 4\}$ and $B = \{1, 3, 5, 7, 9, 11\}$, list $A \cap B$.

- A $\{1, 3\}$
- B $\{1, 3, 5\}$
- C $\{1, 2, 3\}$
- D $\{1, 2, 3, 4\}$

3 The graph below shows the number of bags of beans sold by a man in five days.



On which day did the man sell the highest number of bags of beans?

- A Monday
- B Tuesday
- C Thursday
- D Friday

4 If $x + 15 = 20$, then x equals ...

- A 5.
- B 10.
- C 30.
- D 35.

5
$$\begin{array}{r} 7\,8\,7\,0\,5\,6 \\ -4\,5\,1\,8\,2\,8 \\ \hline \\ \hline \end{array}$$

- A 336 238
- B 336 228
- C 335 238
- D 335 228

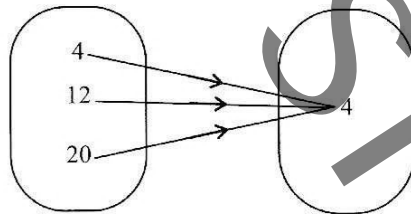
6 What is the next number in the sequence below?
128, 64, 32, 16, ...

- A 10
- B 8
- C 4
- D 2

7 A grade seven learner got 16 marks out of 20 in Mathematics. Convert the marks to a percentage.

- A 80%
- B 8%
- C 0.8%
- D 0.08%

8 Look at the diagram below.



The mapping shown is a ...

- A one to one.
- B one to three.
- C one to many.
- D many to one.

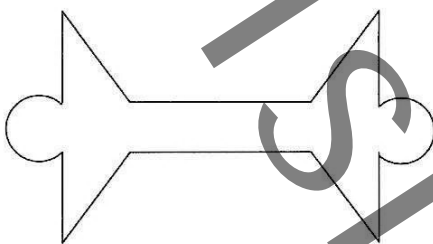
9 $120.542 + 48.78 =$

- A 169.322
- B 169.222
- C 125.420
- D 125.320

10 What are the prime factors of 15?

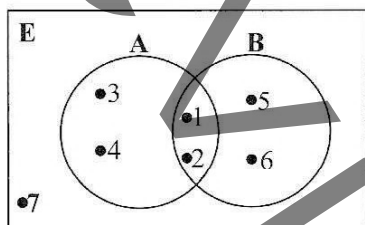
- A 2 and 3
- B 2 and 5
- C 3 and 5
- D 1 and 15

- 11 Find the perimeter of a triangular field measuring 125 metres by 100 metres by 75 metres.
- A 300 metres
 - B 225 metres
 - C 200 metres
 - D 175 metres
- 12 A watermelon was cut into 7 equal pieces. If four pieces were eaten, what fraction of the watermelon were the remaining pieces?
- A $\frac{4}{7}$
 - B $\frac{3}{7}$
 - C $\frac{7}{4}$
 - D $\frac{7}{3}$
- 13 Look at the shape below.



- How many lines of symmetry has the shape?
- A 0
 - B 1
 - C 2
 - D 3
- 14 Express $\frac{3}{4}$ as a percentage.
- A 750%
 - B 75%
 - C 7.5%
 - D 0.75%
- 15 In Hindu-Arabic numerals, the Roman numeral LXXIV can be written as ...
- A 54.
 - B 64.
 - C 74.
 - D 84.

- 16 Find the mode of 5, 8, 6, 5, 7, 6, 5 and 7.
- A 8
B 7
C 6
D 5
- 17 A trader bought cooking oil at K63.00 and sold it at K49.00. What was his loss?
- A K112.00
B K102.00
C K24.00
D K14.00
- 18 List the set $A \cup B$ in the Venn diagram below.



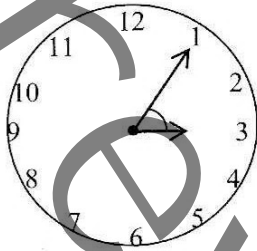
- A $\{1, 2\}$
B $\{1, 2, 3, 4\}$
C $\{1, 2, 3, 4, 5, 6\}$
D $\{1, 2, 3, 4, 5, 6, 7\}$
- 19 Change $\frac{4}{5}$ to a decimal fraction.
- A 0.8
B 0.7
C 0.5
D 0.4
- 20 Express $6 \times 6 \times 6 \times 6 \times 6$ in index form.
- A 2^6
B 5^6
C 6^4
D 6^5
- 21 Express the ratio 8 metres to 800 metres in its lowest terms.
- A 100 to 1
B 10 to 1
C 1 to 100
D 1 to 10

- 22 Convert 0.25 to a percentage.
- A 0.25%
 - B 2.5%
 - C 25%
 - D 250%
- 23 Which of the following numbers are factors of 12?
- A 12, 24, 36, 48, 50
 - B 12, 24, 36, 48
 - C 1, 2, 3, 6, 12, 24
 - D 1, 2, 3, 4, 6, 12
- 24 Divide 175 by 25.
- A 5
 - B 7
 - C 150
 - D 200
- 25 Which of the following statements is correct?
- A $+4 < -5$
 - B $-11 > +21$
 - C $+6 < -21$
 - D $+3 > -7$
- 26 In a certain year, Mrs Chongo produced 10 000 bags of rice while Mrs Mubita produced 9 874 bags of rice. Calculate the difference between the number of bags of rice produced.
- A 126
 - B 226
 - C 1 126
 - D 19 874
- 27 Arrange the Roman numerals below from the smallest to the biggest.
DCV, LXV, CDV
- A CDV, DCV, LXV
 - B DCV, CDV, LXV
 - C LXV, CDV, DCV
 - D LXV, DCV, CDV

28 $2.55 \times 0.5 =$

- A 0.1275
- B 1.275
- C 12.75
- D 127.5

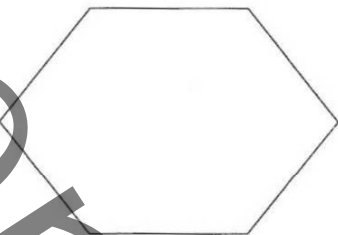
29 The marked angle on the clock face below is called ...



- A a right angle.
 - B an obtuse angle.
 - C an acute angle.
 - D a straight angle.
- 30 A bus takes 2 hours to cover a distance of 96km. What is its average speed?
- A 16km/h
 - B 48km/h
 - C 94km/h
 - D 98km/h
- 31 Find $\frac{4}{9}$ of 36.
- A 8
 - B 16
 - C 18
 - D 81
- 32 If 7 packets of salt cost K49.00, what will be the cost of 13 packets of the same type?
- A K91.00
 - B K69.00
 - C K62.00
 - D K29.00
- 33 Find the difference between 4.326 and 2.24.
- A 6.566
 - B 4.102
 - C 2.186
 - D 2.086

- 34 K25 000.00 was invested for 2 years at the rate of 4% per year. Calculate the simple interest.
- A K2 000.00
 - B K2 500.00
 - C K3 495.00
 - D K3 125.00
- 35 Convert 242_{five} to base ten.
- A 70
 - B 72
 - C 242
 - D 2 420
- 36 What is the average of 20°C , 38°C , 28°C , 32°C and 22°C ?
- A 20°C
 - B 22°C
 - C 28°C
 - D 38°C
- 37 $\frac{1}{2} + \frac{3}{5} =$
- A $1\frac{1}{10}$
 - B $\frac{3}{10}$
 - C $\frac{4}{10}$
 - D $\frac{4}{7}$
- 38 The mass of a piece of beef is 15.64kg. Express this mass to 1 decimal place.
- A 14.7 kg
 - B 15.4 kg
 - C 15.6 kg
 - D 15.7 kg
- 39 Evaluate 5^3 .
- A 625
 - B 125
 - C 25
 - D 5

40 The shape below is a ...



- A square.
- B quadrilateral.
- C pentagon.
- D hexagon.

41 $8\frac{1}{2} \div 2\frac{1}{2} =$

- A $2\frac{3}{5}$
- B $21\frac{1}{4}$
- C $3\frac{2}{5}$
- D $\frac{5}{17}$

42 8 boys can paint a hall in 6 hours. How many hours can 12 boys take to paint the same hall, if they work at the same rate?

- A 4
- B 6
- C 14
- D 18

43 Find the value of $12 \times (15 + 5)$.

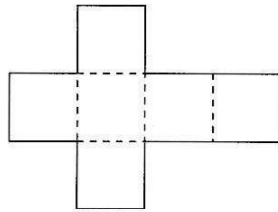
- A 240
- B 185
- C 180
- D 60

44 105 people used a bus for a trip. If the bus carried 35 people only at a time, how many trips did it make?

- A 140
- B 70
- C 35
- D 3

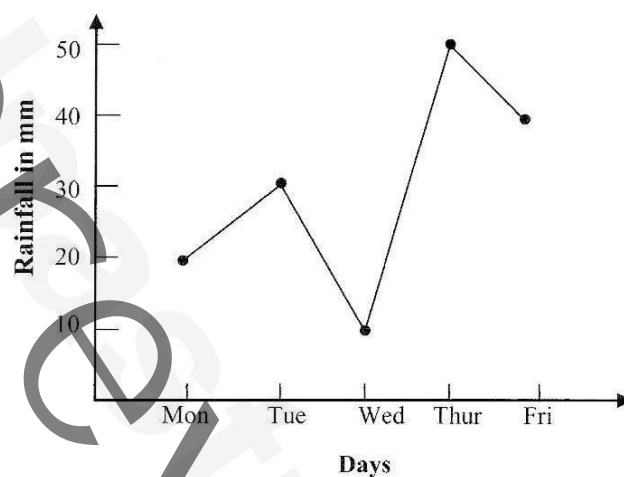
- 45 Multiply 248 by 47.
- A 10 556.
 - B 10 656.
 - C 11 556.
 - D 11 656.
- 46 Mumbi bought a dress at K400.00. She later sold it at K500.00. Calculate her percentage profit.
- A 20%
 - B 25%
 - C 30%
 - D 35%
- 47 The shape of a water tank at Mrs Bupe's farm is that of a cuboid. If its length is 14m, breadth 12m and height 10m, find the volume of the water tank.
- A $1\,680\text{m}^3$
 - B $1\,678\text{m}^3$
 - C 560m^3
 - D 108m^3
- 48 A string which is 22.5m long is cut into smaller pieces each measuring 2.25m. How many pieces of such length can be cut from the string?
- A 10 pieces
 - B 11 pieces
 - C 20 pieces
 - D 25 pieces
- 49 Round off 24 178 to the nearest hundred.
- A 24 278
 - B 24 208
 - C 24 200
 - D 24 180
- 50
$$\begin{array}{r} 4\,5\,4_{\text{eight}} \\ + 2\,2\,4_{\text{eight}} \\ \hline \end{array}$$
- A 230_{eight}
 - B 600_{eight}
 - C 700_{eight}
 - D 678_{eight}

- 51 The shape below is a net of a ...



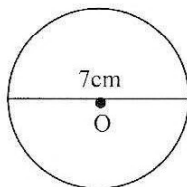
- A cube.
 B cuboid.
 C rectangle.
 D square.
- 52 Find the difference between 44_{five} and 1_{five} .
- A 4001_{five}
 B 3214_{five}
 C 2114_{five}
 D 1104_{five}
- 53 Express 18 as a product of prime factors.
- A $1 \times 2 \times 3 \times 3$
 B $2 \times 3 \times 3$
 C 2×9
 D 6×3
- 54 $-3 + (+12) =$
- A -15
 B -9
 C $+9$
 D $+15$
- 55 Mutale had K3 000.00 to spend. She bought two dresses at K500.00, two belts at K90.00, a handbag at K250.00 and a pair of shoes at K499.00. How much money did she remain with?
- A K1 339.00
 B K1 616.00
 C K1 661.00
 D K1 933.00
- 56 Given that \$1 is equal to K6.00, what is the price in Zambian Kwacha of a car costing \$2 125?
- A K2 125.00
 B K12 650.00
 C K12 720.00
 D K12 750.00

- 57 The graph below shows the amount of rainfall recorded at a certain town from Monday to Friday.



What is the difference between the highest and the lowest rainfall recorded?

- A 50mm
 - B 40mm
 - C 30mm
 - D 20mm
- 58 Solve the inequation $4x + 2 > 10$.
- A $x > 2$
 - B $x < 2$
 - C $x > 4$
 - D $x > 8$
- 59 Find the circumference of the circle below. ($\pi = 3.14$)



- A 3.86cm
 - B 10.14cm
 - C 21.78cm
 - D 21.98cm
- 60 If set $V = \{1, 2, 3\}$, how many subsets does it have?
- A 9
 - B 8
 - C 6
 - D 3

STOP! PLEASE CHECK ALL YOUR WORK CAREFULLY