THE ULTIMATE MATHEMATICS AMBASSADOR 2019 TUMA

7 TH EDITION

NOW IN 3 STAGES

(Annual Mathematics Competition)

STAGE 2 - WRITTEN TEST

INSTRUCTIONS

1. This paper is in two sections (A and B)
2. You are to answer all the questions in the two sections
3. SECTION A consists of 20 multiple-choice questions. Each question in this section is worth 2 marks
4. Use HB pencil ONLY to shade the appropriate answer from the options labelled A to E in the appropriate section of the answer Ⓐ ⬤ Ⓒ Ⓓ Ⓔ
5. Below is a sample of how to shade correctly. For instance, if your answer to a question is option B then shade as indicated.
6. Do not shade more than one option for each question. If you make a mistake, erase neatly with an eraser and then shade your new option.
7. SECTION B consists of 4 theory questions. This section is worth 40 marks.
8. Orderliness, neatness and clarity is encouraged.

SECTION A

INSTRUCTION: Answer all questions in this section. Pick the appropriate answer from the options lettered A to E.

1. The level of oil in a bottle is at the halfway point. More oil was poured into it till it became $\frac{7}{8}$ full. What fraction of the bottle is occupied by the additional amount of oil?

      (a) $\frac{1}{8}$ (b) $\frac{3}{8}$ (c) $\frac{5}{8}$

      (d) $\frac{6}{7}$ (e) $\frac{11}{8}$

2. A worker was paid ₦6.50 per day. For how many days did he work if he received a total of ₦2 080.00?

      (a) 24 days   (b) 32 days   (c) 64 days

      (d) 240 days   (e) 320 days

3. Wuraola gets ₦2 050 as pocket money. She spends ₦750 and saves the rest. What is the ratio of her savings to the amount she spends?

      (a) 26:15   (b) 15:26   (c) 41:15

      (d) 15:41   (e) 26:41

4. What is the rate of interest per year in my bank if I receive an interest of ₦72 for an amount of #480 deposited in a bank for two years?

      (a) 2.5%   (b) 5%   (c) 7.5%

      (d) 15%   (e) 20%

5. Simplify: $4(p + 2q) + 2(3p - q)$.

    (a) $10p + 10q$ (b) $6(4p - q)$ (c) $10p + 6q$

    (d) $10p + 5q$ (e) $10p + q$

6. 20 men, working at the same rate, can do a piece of work in 24 days. In how many days will 4 of the men do complete the same work?

    (a) 120 days   (b) 160 days   (c) 4.8 days

    (d) 30 days   (e) 100 days

7. If \$1 is worth ₦360. What is the value (in Naira) of \$92?

    (a) ₦30 120   (b) ₦31 120   (c) ₦32 120

    (d) ₦33 120   (e) ₦34 120

8. The product of two numbers is 16. If one of the number is $2\frac{5}{8}$, find the other

    (a) 42   (b) $\frac{168}{21}$ (c) $\frac{128}{21}$

    (d) $18\frac{5}{8}$ (e) $\frac{107}{8}$

9. How many whole numbers do we have from 5 to 75?

    (a) 72   (b) 71   (c) 70

    (d) 69   (e) 15

10. Simplify $DCLXXV - CDLX - XCIX + MX$

    (a) DCXCIX   (b) XCXVI   (c) MCXIII

    (d) CIV   (e) MCXXVI

11. By how much is the sum of $3\frac{1}{2}$ and $1\frac{1}{6}$ less than $5\frac{5}{6}$

      (a) $10\frac{1}{2}$ (b) $3\frac{1}{2}$ (c) $1\frac{1}{3}$

      (d) $1\frac{1}{6}$ (e) $\frac{5}{6}$

12. Find the value of x in $12\frac{1}{2} - x + 3 = 8$

      (a) $-7\frac{1}{2}$ (b) $7\frac{1}{2}$ (c) $8\frac{1}{2}$

      (d) $-8\frac{1}{2}$ (e) $9\frac{1}{2}$

13. The diameter of a wheel is $14cm$. How many revolutions will it make if it travels a distance of $88cm$? $\left(Take\ \pi = \frac{22}{7}\right)$

      (a) 8   (b) 7   (c) 4

      (d) 2   (e) 1

14. Tap A takes 42 minutes to fill a drum. The ratio of the time taken by tap B to fill the tank to that taken by tap A is 6:7. How much longer will it take tap A to fill the bath?

      (a) 6 minutes   (b) 7 minutes   (c) 28 minutes

      (d) 36 minutes   (e) 49 minutes

15. The average age of six men is 32 years. If the ages of five of them are 35 years, 28 years, 25 years, 32 years, 35 years, what is the age of the sixth man?

      (a) 37 years   (b) 36 years   (c) 35 years

      (d) 34 years   (e) 33 years

16. Find the perimeter of a quadrant of a circle of radius $14cm$ $\left(\text{Take } \pi = \frac{22}{7}\right)$

      (a) $11cm$ (b) $25cm$ (c) $36cm$

      (d) $39cm$ (e) $50cm$

17. Tunde read $\frac{3}{7}$ of the pages of a story book in the morning and $\frac{5}{12}$ of the remaining pages in the afternoon. If he finished reading the last 52 pages in the evening, how many pages were there in the book?

      (a) 336   (b) 78   (c) 84

      (d) 219   (e) 156

18. The floor of a room with dimensions $16cm$ by $12cm$ is covered with square tiles, each of length $0.32cm$. How many of such tiles will be needed to cover one third of the room?

      (a) 1875   (b) 1200   (c) 832

      (d) 625   (e) 256

19. A tank with a square base of length 2m contains water to a height of 2m. What will be the new height if $1.5m^3$ of water is taken out of it?

      (a) $0.375m$ (b) $0.8m$ (c) $1.625m$

      (d) $1.8125m$ (e) $2.5m$

20. A motorist travelling at a uniform speed of 50km/h takes two and half hour to complete his journey. How much time will he save if he increases his speed by 25km/h?

      (a) 5 hours   (b) $2\frac{1}{2}$ hours   (c) 50 minutes

      (d) 45 minutes   (e) 30 minutes

SECTION B

*INSTRUCTION: There are **four (4)** questions in this section. Answer all questions, showing all your workings clearly, neatly and orderly.*

1. A rectangle and a square have the same perimeter. The rectangle has a length of $12cm$ an area of $96cm^2$. Find the area of the square.

   (8 marks)

2. Peter has ₦800 while Thompson has 62.5% of what Peter has. After repaying the debt he owed to Peter, Thompson finds that he has $\frac{3}{10}$ of the amount of money Peter now has. How much was the debt?
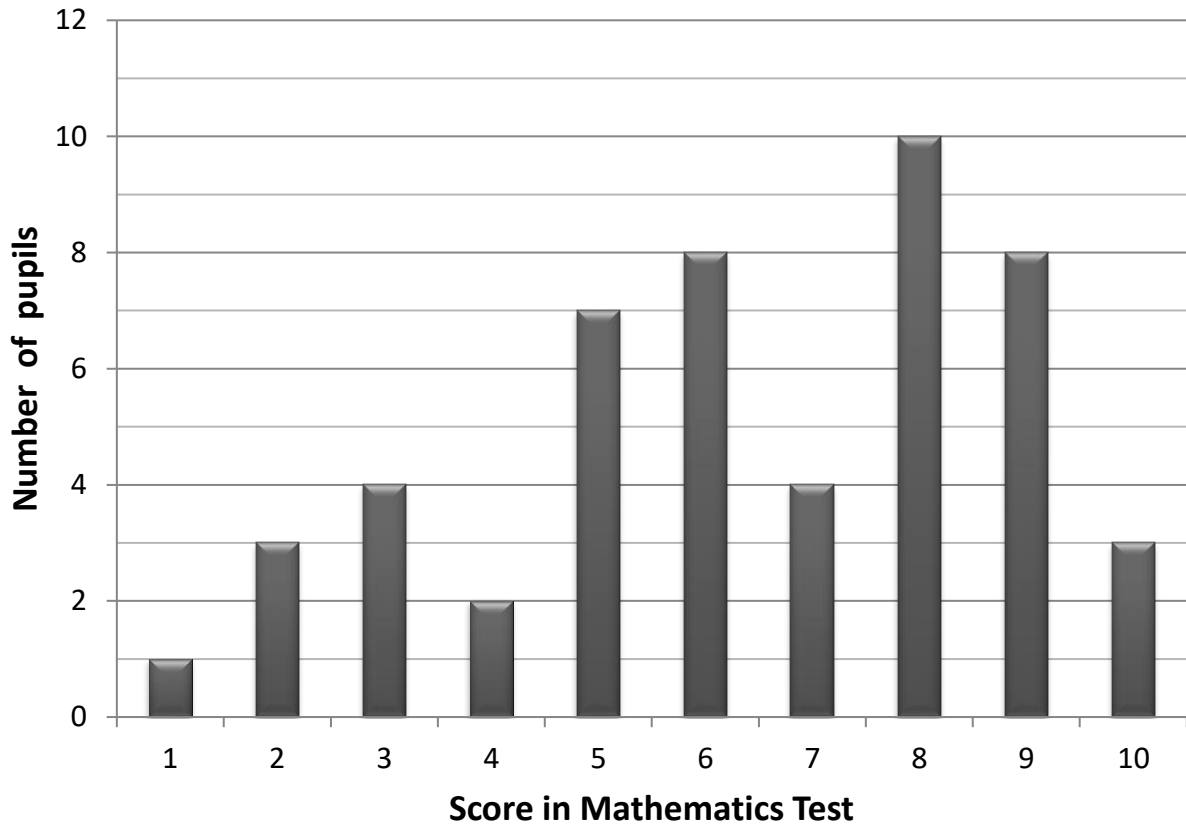
   (8 marks)

3. A motorist travels $120km$ in 90 minutes and then travelled for a further 30 minutes at a speed of $120km/hr$.
   (a)   Find his average speed (in km/hr) for the first part of the journey
   (b)   Find the distance covered in the second part of the journey
   (c)   What is the average speed (in km/hr) for the whole journey
   (d)   If his vehicle consumes one litre of petrol for every $12km$ covered, calculate the total volume of petrol consumed for the entire journey.

   (12 marks)

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4. The scores (out of a maximum of 10) of a certain number of pupils in a mathematics test are shown in the bar chart below:

(a) How many pupils wrote the test?

(b) If the pass mark was 6, how many pupils passed the test?

(c) What fraction of the pupils that passed the test scored 10 marks

(d) What was the modal mark?

(e) Calculate the range of the marks.

(f) Find the mean mark.

(12 marks)