



THE AMBASSADORS SCHOOLS, OTA

E-mail: info@theambassadorsschools.com

Tel: 08055103318, 07089995042

THE ULTIMATE MATHEMATICS AMBASSADOR 2016



(Annual Mathematics Competition)

TIME ALLOWED: 2 hours

INSTRUCTIONS

1. This paper is in three sections (A, B and C)
2. You are to answer all the questions in the three sections
3. SECTION A consists of 40 multiple-choice questions. Each question in this section is worth 1.5 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 sheet.
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.

A	B	C	D	E
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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 10 questions. You are to write only the answer to the questions in this section. Each question is worth 3 marks.
8. SECTION C consists of 2 theory questions. This section is worth 10 marks.
9. 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.

- Peter's mother is 47 years old. If Peter is 28 years younger than his mother. How old is Peter.
(a) 17 years (b) 18 years (c) 19 years
(d) 20 years (e) 75 years
- Ojo was born on 10th June, 1978 when will he celebrate his ninth birthday anniversary?
(a) 10/06/77 (b) 10/06/79 (c) 10/06/87
(d) 10/06/88 (e) 10/06/89
- Find the total weight of 5 tins, when each tin weighs 470grammes
(a) 94g (b) 465g (c) 940g
(d) 2305g (e) 2350g
- Round off 242.76 to three significant figures
(a) 242.76 (b) 242.8 (c) 242
(d) 243 (e) 240
- What is the area of a lawn 20m long and $19\frac{1}{2}m$ wide?
(a) $39m^2$ (b) $78m^2$ (c) $118m^2$
(d) $390m^2$ (e) $400m^2$

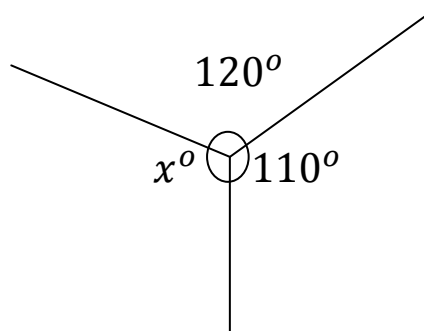
6. Find the perimeter of a rectangle $1.4m$ long and $2.37m$ wide.
- (a) $1.885m$ (b) $3.318m$ (c) $6.14m$
(d) $7.54m$ (e) $15.08m$
7. Find the simple interest on ~~₦~~1 640 for 27 years at $1\frac{1}{2}\%$ per annum
- (a) ~~₦~~64.00 (b) ~~₦~~64.20 (c) ~~₦~~664.00
(d) ~~₦~~664.20 (e) ~~₦~~975.80
8. How many 300g of flour can be filled from a sack containing 84kg?
- (a) 308 bags (b) 280 bags (c) 715 bags
(d) 1 060 bags (e) 198 bags
9. What is the value of $\sqrt{3^2 \times 4^2 \times 1^2 \times 8^2}$
- (a) 48 (b) 84 (c) 96
(d) 72 (e) 86
10. Find the difference between 6 weeks 2 days and 3 weeks 5 days.
- (a) 3 weeks 4 days (b) 2 weeks 3 days (c) 2 weeks 4 days
(d) 2 weeks 5 days (e) 3 weeks 2 days
11. The scale of a map is $1cm$ to $50km$. what does $5.6cm$ represent on land.
- (a) $380km$ (b) $208km$ (c) $275km$
(d) $2\ 080km$ (e) $280km$

12. Take away the sum of 153 and 135 from the difference between 738 and 99?

- (a) 99 (b) 189 (c) 351
 (d) 585 (e) 639

13. Find the value of x in the diagram below.

- (a) 90°
 (b) 100°
 (c) 120°
 (d) 130°
 (e) 150°



14. What is the product of the L.C.M. and H.C.F. of 10, 15 and 25

- (a) 150 (b) 300 (c) 350
 (d) 375 (e) 750

15. Simplify: $\frac{1}{5}$ of $\left(\frac{3}{6} \div \frac{2}{4}\right)$

- (a) $\frac{1}{3}$ (b) $\frac{2}{5}$ (c) $\frac{1}{5}$
 (d) $\frac{1}{12}$ (e) $\frac{1}{20}$

16. Three business women are to share a sum of ₦126 000 profit in the ratio of their investments as follows 1:2:4. Find the sum of money received by the woman who contributed the least amount?

- (a) ₦18 000 (b) ₦36 000 (c) ₦48 000
 (d) ₦54 000 (e) ₦72 000

17. A printer prints 5 pages per minute. How long would it take to print 200 pages?

- (a) 40 minutes (b) 50 minutes (c) 80 minutes
(d) 100 minutes (e) 120 minutes

18. If the second day of the month is a Wednesday, then 21st day of the month is a

- (a) Monday (b) Tuesday (c) Wednesday
(d) Thursday (e) Friday

19. Calculate $\frac{4848}{24} - 2$

- (a) 2 (b) 20 (c) 22
(d) 200 (e) 2000

20. What is 20% of 20% of 1000?

- (a) 400 (b) 300 (c) 150
(d) 100 (e) 40

21. Tony has 45.5kg. Chika has 5.5kg more than Tony. Find the total weight they both have

- (a) 51kg (b) 56.6kg (c) 76.5kg
(d) 90kg (e) 96.5kg

22. The winner ran the 200 metres race in 25 seconds. What was her speed in km per hour?

- (a) 0.008km/h (b) 8km/h (c) 20.8km/h
(d) 28.8km/h (e) 30km/h

23. If I buy goods for ₦10 and make a profit of 125% in selling it, what is my selling price?

- (a) ₦12.50 (b) ₦22.50 (c) ₦25.00
(d) ₦32.00 (e) ₦35.00

24. A hen lays 5 eggs per week. How many years will it take to lay 520 eggs.

- (a) 1 (b) 2 (c) 3
(d) 4 (e) 5

25. One third of a number is greater than one fifth of it by 16. What is the number?

- (a) 40 (b) 80 (c) 120
(d) 160 (e) 240

26. Find the sum of LXVIII, XCII and LIV.

- (a) 104 (b) 114 (c) 214
(d) 244 (e) 254

27. A clock which gains 3 minutes an hour indicates 9.15*am* one morning.
What time does it indicate 5 hours later?
- (a) 1:30*pm* (b) 2:15*pm* (c) 2:30*pm*
(d) 2:45*pm* (e) 3:00*pm*
28. If 9 men can do a piece of work in 4 days, how long will it take 6 men to do the same work working at the same rate?
- (a) 3 days (b) 4 days (c) 5 days
(d) 6 days (e) 7 days
29. In a village there are 400 people. $\frac{3}{4}$ of them are women. If $\frac{1}{3}$ of the women are traders, how many women traders are there?
- (a) 400 (b) 300 (c) 200
(d) 150 (e) 100
30. A ball always bounces to $\frac{3}{4}$ of the height from which it falls. If it falls from the height of 320*cm*, how high will it rise after the 3rd bounce?
- (a) 135*cm* (b) 180*cm* (c) 215*cm*
(d) 240*cm* (e) 305*cm*
31. The angles of a triangle are $3y$, $y + 10^\circ$ and $y + 20^\circ$. Find the value of y .
- (a) 30° (b) 50° (c) 100°
(d) 150° (e) 180°

32. Find the value of $\frac{1}{\sqrt{4}} - \frac{1}{\sqrt{9}}$

- (a) $\frac{5}{6}$ (b) $\frac{13}{36}$ (c) $\frac{1}{6}$
 (d) $\frac{5}{36}$ (e) 1

33. A water tank contains 48 litres when it is half full. How much water needs to be removed from it so that it will be $\frac{1}{6}$ full?

- (a) 16 litres (b) 20 litres (c) 24 litres
 (d) 32 litres (e) 40 litres

34. Jide bought a note book for ₦10 and sold it to Olu at a profit of 20%. Olu then sold it to Peter at a profit of 10%. How much did Peter pay for it?

- (a) ₦10.00 (b) ₦12.00 (c) ₦12.50
 (d) ₦13.00 (e) ₦13.20

35. A trader sold a table for ₦600 and made a profit of 20%. How much would he have to sell it to make an extra 5% profit.

- (a) ₦1 150 (b) ₦1 250 (c) ₦1 300
 (d) ₦1 350 (e) ₦1 400

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

- (a) 5cm (b) 8cm (c) 10cm
 (d) 12cm (e) 16cm

37. Simplify $\frac{4}{\frac{2}{3}} - \frac{\frac{2}{3}}{2}$

(a) $\frac{3}{17}$

(b) $\frac{17}{3}$

(c) $\frac{19}{3}$

(d) 1

(e) None of the above

38. The sum of four consecutive even numbers is 252. What is the sum of the highest and lowest numbers

(a) 60

(b) 66

(c) 88

(d) 126

(e) 182

39. A cylindrical tank has a diameter of 28cm and a height of 10cm and is full of oil. The oil is poured into another cylinder which has a diameter of 40cm . how deep is the oil in the second cylinder

(a) 4.9cm

(b) 9cm

(c) 9.8cm

(d) 14cm

(e) 19.8cm

40. If the cube of a positive number is half the square of the same number then, what is the number?

(a) $\frac{1}{2}$

(b) $\frac{2}{5}$

(c) $\frac{5}{8}$

(d) $\frac{9}{10}$

(e) 1

SECTION B

INSTRUCTION: Answer all questions in this section. Write *ONLY* the answer to each question in this section in the appropriate space provided in the answer sheet.

41. What is the difference between the sum of prime numbers from 80 to 100 and the sum of even numbers from 1 to 19?
42. Joseph's mother was 32 years old when he was born. If he was 10 years old in 1966, in what year was his mother born?
43. How many days are there from February 20th in a leap year to April 3rd in the same year?
44. If 20% of the inhabitants of a town are men and 36 are women while the remaining are children. What is the percentage of the inhabitants are children, given that the total number of people in the town is 120?
45. The mean of three numbers is 6. The mode of the three numbers is 7. What is the least number?
46. Subtract the place value of 4 in 5 040 761 from the sum of the place values of 3 in 1 241 367 and 1 in 2 105 320
47. Tola weighs 64kg, Bola weighs 7kg more than Tola and Sola weighs 13kg more than Bola. What is Sola's weight?

48. A square plot is of side 80 metres. The sides are increased by 25% to form a new square plot. By how much of the area of the new plot does exceed the area of the original plot?

49. If I read $\frac{1}{4}$ of a book today and $\frac{1}{2}$ of the remainder tomorrow, I shall have 12 pages left unread. How many pages are there in the book?

50. What will be the 43rd letter in this series?

A, B, B, C, C, C, D, D, D, D, ...

SECTION C

INSTRUCTION: Answer all questions in this section. Show all your workings in this section clearly, neatly and orderly.

1. A girl bought six oranges at 60k each and sold four of them at 38k each at a nearby market. Her friend bought the remaining two oranges at 66k each. What was her percentage loss or gain?

(5 marks)

2. Given that $\frac{6}{5 - \frac{1}{1 - \frac{1}{x}}} = 2$, find x

(5 marks)