



# **Roseville Secondary School, Enugu.**

## **JSS 1 ENTRANCE EXAMINATION**

**2024/2025 ACADEMIC SESSION**

**SUBJECT: MATHEMATICS**

**TIME ALLOWED: 120 MINUTES**

### **INSTRUCTIONS:**

1. This paper consists of two sections: A - Mathematics, and B- Quantitative Reasoning.
2. Attempt all questions by shading the correct option from the list of options lettered A - E on the answer sheet provided with a pencil.
3. Do not shade more than one option for each question.
4. Clearly write your examination number and date of birth on your question paper using a pen.
5. Use this paper for your rough work.
6. The use of calculators or any form of smart gadgets and wristwatches attracts outright DISQUALIFICATION.
7. Submit all question papers alongside your answer sheet.

**YOU ARE ADVISED TO WORK COMPLETELY ON YOUR OWN.**

**EXAMINATION NUMBER:** -----

**DATE:** -----

**DATE OF BIRTH:** -----

# SECTION A: MATHEMATICS (1 – 60)

1. Write in its simplest form the ratio of 25g. to 10g.
  - A. 5:2
  - B. 2:5
  - C. 5:10
  - D. 10:5
  - E. 25:10
2. An accountant's fee for preparing a tax report for a customer is 40% more than his closest competitor. If the competitor charges \$300, what is this accountant's fee?
  - A. \$ 360
  - B. \$ 400
  - C. \$ 420
  - D. \$ 430
  - E. \$ 500
3. What is the difference between  $\frac{7}{8}$  and  $\frac{1}{2}$ ?
  - A.  $\frac{3}{4}$
  - B.  $\frac{3}{6}$
  - C.  $\frac{3}{8}$
  - D.  $\frac{6}{2}$
  - E.  $\frac{6}{8}$
4. Which of the following is the equivalent of  $3 - (-6)$ ?
  - A. -9
  - B. -3
  - C. 3
  - D. 5
  - E. 9
5. On a recent trip, the smiths drove at an average speed of 55 miles per hour. If the trip took  $5\frac{1}{2}$  hours, how many miles did they drive?
  - A. 301.1
  - B. 302.5
  - C. 312.50
  - D. 320.5
  - E. 320.75
6. Mr. Jones has agreed to borrow \$3500 for one year at 10% interest. What is the total amount he will pay back to the bank?
  - A. \$350
  - B. \$3675
  - C. \$3700
  - D. \$3750
  - E. \$3850
7. What is the value of  $2^3 \times 3^2 \times 7$ ?
  - A. 504
  - B. 376
  - C. 252
  - D. 72
  - E. 63
8. A rectangular tank is 2m deep, 6m long and 4m wide. How many cubic meter of water can it hold?
  - A.  $96\text{m}^3$
  - B.  $60\text{m}^3$
  - C.  $48\text{m}^3$
  - D.  $24\text{m}^3$
  - E.  $12\text{m}^3$
9. What is the simple interest on ₦ 500 for 5 years at rate of 5% per annum?
  - A. ₦125.00
  - B. ₦115.00
  - C. ₦105.00
  - D. ₦100.00
  - E. ₦75.00
10. When Ada was 15 years old, her sister Ngozi was 18. If Ada was born in 1970 in what year was Ngozi born?
  - A. 1973
  - B. 1967
  - C. 1963
  - D. 1955
  - E. 1952
11. Write in figures: six hundred and twelve million, nine hundred and twenty-three thousand, two hundred and sixty-three
  - A. 612 923 263
  - B. 612 932 236
  - C. 617 923 263
  - D. 620 923 263
  - E. 621 923 362

12. What is the perimeter of an equilateral triangle of side 20cm?

- A. 400cm
- B. 40cm
- C. 60cm
- D. 65cm
- E. 80cm

13. Approximate 15065 to the nearest thousand.

- A. 14000
- B. 14500
- C. 15000
- D. 15500
- E. 16000

14. When  $x = 3$ , the value of  $2x - 3$  is

- A. 2
- B. 3
- C. 4
- D. 5
- E. 6

15. Express 55% as a decimal number.

- A. 55.0
- B. 0.055
- C. 0.50
- D. 0.55
- E. 5.00

16. A man walks at an average speed of 4km/hr. If he starts walking at 10:00 a.m., what distance will he cover by 1:00 pm?

- A. 10 km
- B. 12 km
- C. 14 km
- D. 16 km
- E. 8 km

17. When 81.3 is divided by 10, the quotient is?

- A. 0.0813
- B. 0.813
- C. 813
- D. 8.31
- E. 8.13

18. What is the place value of 3 in 4.9236?

- A. Hundredths
- B. Thousandths
- C. Ten thousandths
- D. Hundred thousandths
- E. Tens

19. Which symbol belongs in the box?

$$0.0983 \square 0.124$$

- A.  $\leq$
- B.  $<$
- C.  $>$
- D.  $=$
- E.  $\neq$

20. The greatest common factor of 24 and 12 is

- A. 2
- B. 4
- C. 6
- D. 8
- E. 12

21. The number that is **not** a factor of 120 is

- A. 5
- B. 6
- C. 7
- D. 8
- E. 2

22. In the simplest form,  $\frac{12}{16}$  is

- A.  $\frac{3}{4}$
- B.  $\frac{2}{3}$
- C.  $\frac{2}{6}$
- D.  $\frac{4}{8}$
- E.  $\frac{2}{8}$

23. If  $y + 2 > 10$ , then y must be

- A. smaller than 10
- B. smaller than 8
- C. greater than 8
- D. equal to 0
- E. none of the above

24. What number multiplied by itself gives 256?

- A. 12
- B. 13
- C. 14
- D. 15
- E. 16

25. If one factor of 407 is 11, what is the other factor

- A. 22
- B. 27
- C. 33
- D. 35
- E. 37

26. Find the volume of a rectangular block 6cm long, 4cm wide and 1.5cm thick

- A.  $11.5\text{cm}^3$
- B.  $15.0\text{cm}^3$
- C.  $25.5\text{cm}^3$
- D.  $36.0\text{cm}^3$
- E.  $48.0\text{cm}^3$

27. Write 233.75 correct to the nearest whole number

- A. 230
- B. 233
- C. 234
- D. 2337
- E. 2338

28. Express 514 in Roman Numerals

- A. CCXLV
- B. DXIV
- C. DXLV
- D. XDIV
- E. XLIV

29. Find the difference between the values of 6 in 12687 and in 21867

- A. 9180
- B. 660
- C. 620
- D. 540
- E. 0

30. What are the prime factors of 210?

- A. 3,5,7
- B. 2,5,7
- C. 2,3,5
- D. 3,5,11
- E. 2,3,5,7

31. How many one thirds are there in 21

- A. 84
- B. 63
- C. 24
- D. 7
- E. 3

32. Express 3 meters in millimeters

- A. 0003
- B. 30
- C. 300
- D. 3,000
- E. 30,000

33. How many minutes are there between 4:30am and 2:30pm of the same day

- A. 660min
- B. 600min
- C. 540min
- D. 450min
- E. 120min

34. A man has a bicycle which is valued at ₦ 4,500.

The cost of insurance is calculated at the rate of ₦9.50 for every ₦45. How much would he pay to insure the bicycle

- A. ₦92.50
- B. ₦95.00
- C. ₦97.50
- D. ₦950:00
- E. ₦9500.0

35. The diameter of a circle is 7cm. Find the circumference of the circle ( $\pi = \frac{22}{7}$ )

- A. 154cm
- B. 132cm
- C. 44cm
- D. 37.5cm
- E. 22cm

36. Olu, Ngozi and Mohammed are to share 120 oranges in the ratio 1:2:3 respectively. How many oranges will Mohammed have?

- A. 80
- B. 60
- C. 40
- D. 30
- E. 20

37. Find the **lowest** common multiple of 24, 36 and 90

- A. 120
- B. 240
- C. 360
- D. 480
- E. 720

38. The difference between two numbers is 120. If the larger is 840, what is the smaller number

- A. 720
- B. 620
- C. 510

- D. 430  
E. 310
39. Add together 0.60, 1.8 and 30  
A. 23.4  
B. 32.4  
C. 36.7  
D. 43.8  
E. 56.7
40. If a biro costs ₦2.50, how many biros can you buy with ₦285  
A. 114  
B. 250  
C. 285  
D. 411  
E. 570
41. The Roman numeral for 2058 is  
A. DDLVIII  
B. MMLVIII  
C. MMLXVIII  
D. MMXLVIII  
E. MXLDV
42. Find the common factors of 30 and 40  
A. 5,10  
B. 2, 5, 15  
C. 2,10  
D. 2, 5, 10  
E. 3, 5, 10
43. Which of these fractions is equivalent to  $\frac{3}{8}$ ?  
A.  $\frac{9}{16}$   
B.  $\frac{15}{32}$   
C.  $\frac{27}{40}$   
D.  $\frac{21}{56}$   
E.  $\frac{22}{50}$
44. Express  $\frac{29}{3}$  as a mixed number  
A.  $7\frac{2}{3}$   
B.  $9\frac{2}{3}$   
C.  $8\frac{1}{3}$   
D.  $9\frac{1}{3}$   
E.  $6\frac{1}{2}$
45. Express 0.125 as a percentage  
A. 125%  
B. 1.25%  
C. 12.5%

- D. 0.125%  
E. 01.2%
46. How many seconds are there in 2h 7 minus?  
A. 4020 s  
B. 420 s  
C. 3660 s  
D. 7620 s  
E. 370 s
47. What value of  $x$  will make the equation  $2x + 5 = 11$  a true statement?  
A. 3  
B. 6  
C. 8  
D. 12  
E. 10
48. Evaluate  $(-6) - (-12)$   
A. 6  
B. 18  
C. -18  
D. -6  
E. 3
49. Solve for  $x$  in  $x - 2 = 8$   
A. 6  
B. -6  
C. 10  
D. -10  
E. 2
50. What is the volume of a cube of side 5cm?  
A.  $25\text{cm}^2$   
B.  $25\text{cm}^3$   
C.  $125\text{cm}^3$   
D.  $625\text{cm}^2$   
E.  $125\text{cm}$
51. Two numbers are in the ratio 3: 1. The sum of the two numbers is 52. What is the larger number?  
A. 39  
B. 52  
C. 13  
D. 3  
E. 22
52. Simplify  $3(-3)^2$   
A. 9  
B. 27  
C. 18

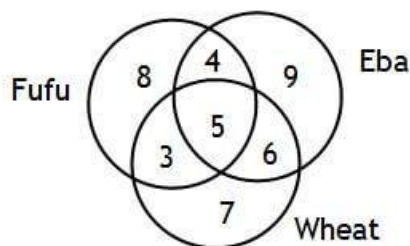
- D. 12  
E. -27
53. If  $x = 2$ ,  $y = 3$ ,  $z = 4$ , then  $2xyz =$   
A. 48  
B. 24  
C. 11  
D. 96  
E. 18
54. Find the volume of a cube of side 7cm.  
A.  $14\text{cm}^2$   
B.  $49\text{cm}^3$   
C.  $21\text{cm}^3$   
D.  $343\text{cm}^3$   
E.  $7\text{cm}^2$
55. Angle that is greater than  $90^\circ$  and less than  $180^\circ$  is  
A. acute angle  
B. right angle  
C. reflex angle  
D. obtuse angle  
E. straight line angle
56. The sum of all interior angles of a triangle is  
A.  $540^\circ$   
B.  $360^\circ$   
C.  $180^\circ$   
D.  $90^\circ$   
E.  $60^\circ$

57. What is the average of these numbers?  
4,5,9,9,2,1.  
A. 4  
B. 5  
C. 6  
D. 7  
E. 9
58. Find the median of 3, 5, 1, 2, and 9.  
A. 1  
B. 3  
C. 4  
D. 9  
E. 2
59. Simplify  $1 - (-4)$   
A. -5  
B. 5  
C. -3  
D. 3  
E. none of the above
60. What is the next number in the series?  
51, 46, 41, 36 ....  
A. 28  
B. 29  
C. 32  
D. 31  
E. 26

## SECTION B: QUANTITATIVE REASONING (61 – 100)

*Use the samples provided to answer the questions that follow each.*

**Sample A: Questions 61 - 66.**



61. How many people like fufu only?

- A. 4  
B. 8  
C. 7
- D. 12  
E. 18
62. How many people have the three dishes as their favourite?  
A. 12  
B. 5  
C. 7  
D. 8  
E. 9
63. How many people like Eba and wheat?  
A. 16  
B. 15

- C. 8
- D. 22
- E. 11

64. How many people like fufu and eba only?

- A. 4
- B. 8
- C. 7
- D. 9
- E. 12

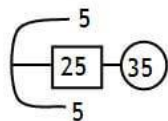
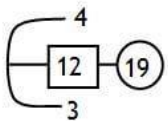
65. How many people like eba only?

- A. 6
- B. 7
- C. 3
- D. 9
- E. 12

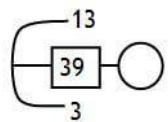
66. How many people altogether prefer one solid food?

- A. 13
- B. 24
- C. 18
- D. 25
- E. 30

#### Sample B: Questions 67-70

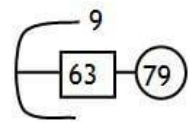


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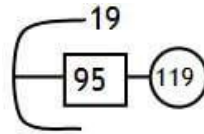
- A. 25
- B. 35
- C. 45
- D. 55
- E. 65

68.



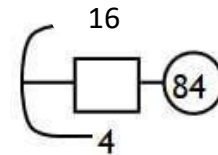
- A. 6
- B. 7
- C. 8
- D. 9
- E. 10

69.



- A. 5
- B. 14
- C. 15
- D. 18
- E. 20

70.



- A. 46
- B. 48
- C. 64
- D. 72
- E. 84

#### Sample C: Questions 71-74

$$4b = 4 \times 3 \times 2 \times 1 = 24$$

$$5b = 5 \times 4 \times 3 \times 2 \times 1 = 120$$

$$6b = 6 \times 5 \times 4 \times 3 \times 2 \times 1 = 720$$

71. What is  $4b + 3b$ ?

- A. 74
- B. 30
- C. 93
- D. 70
- E. 86

72. What is  $2b \times 3b$ ?

- A. 6
- B. 12
- C. 14
- D. 9
- E. 18

73. What is  $6b - 4b$ ?

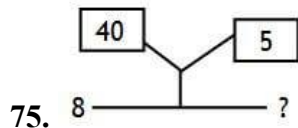
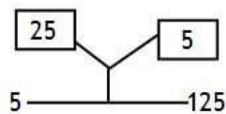
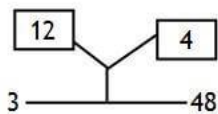
- A. 124
- B. 911
- C. 696
- D. 153
- E. 244

74. What is  $5b + 4b$ ?

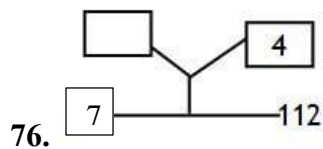
- A. 67
- B. 56

- C. 139
- D. 144
- E. 169

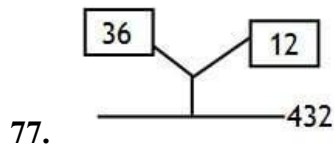
**Sample D: Questions 75 - 78**



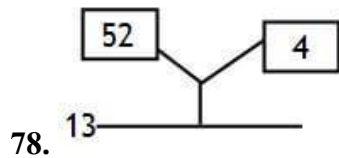
- A. 76
- B. 94
- C. 200
- D. 55
- E. 84



- A. 11
- B. 28
- C. 15
- D. 12
- E. 108



- A. 3
- B. 48
- C. 100
- D. 920
- E. 8



- A. 28
- B. 56
- C. 17
- D. 208
- E. 213

**Sample E: Questions 79 - 82**

$$7 \text{ g } 5 = 35$$

$$9 \text{ g } 9 = 81$$

$$8 \text{ m } 4 = 2$$

$$24 \text{ m } 3 = 8$$

79.  $8 \text{ g } 3 = \underline{\hspace{2cm}}$

- A. 11
- B. 24
- C. 9
- D. 15
- E. 17

80.  $\underline{\hspace{2cm}} \text{ m } 13 = 8$

- A. 104
- B. 76
- C. 83
- D. 156
- E. 162

81.  $13 \text{ g } 12 = \underline{\hspace{2cm}}$

- A. 156
- B. 29
- C. 187
- D. 196
- E. 210

82.  $170 \text{ m } 10 = \underline{\hspace{2cm}}$

- A. 17
- B. 27
- C. 37
- D. 150
- E. 135

**Sample F: Questions 83 - 87**

$$7\text{Z}4 = 9 \quad 8\text{Z}3 = 25 \quad 9\text{Z}1 = 64$$

83.  $12\text{Z}8 = ?$

- A. 1
- B. 4
- C. 8
- D. 16
- E. 32

84.  $?\text{Z}9 = 16$

- A. 11
- B. 12
- C. 13

D. 14

E. 15

85.  $25Z_6 = ?$

A. 225

B. 289

C. 361

D. 390

E. 415

86.  $-4Z? = 16$

A. -2

B. -4

C. -6

D. -8

E. -10

87.  $15Z_7 = ?$

A. 64

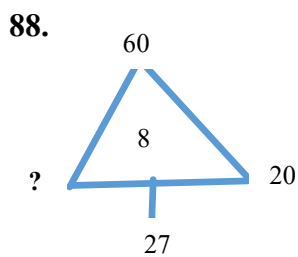
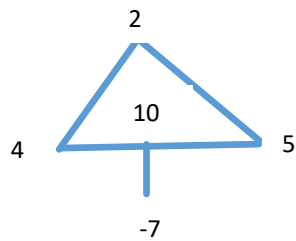
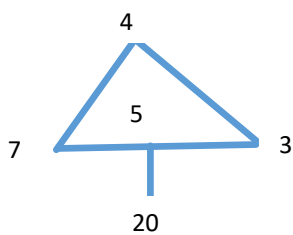
B. 72

C. 81

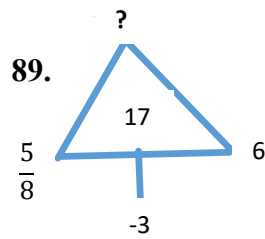
D. 93

E. 100

Sample G: Questions 88 - 92



- A.  $\frac{5}{6}$   
B.  $\frac{7}{8}$   
C.  $\frac{9}{10}$   
D.  $\frac{11}{12}$   
E.  $\frac{13}{14}$



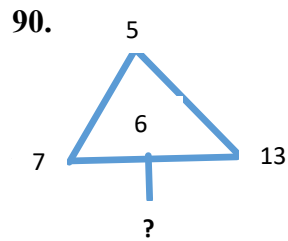
A. 22

B. 32

C. 41

D. 51

E. 60



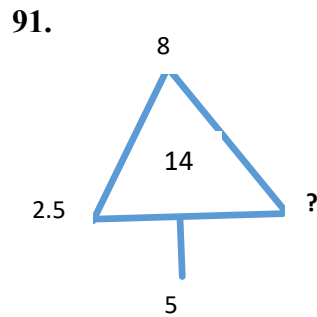
A. 16

B. 18

C. 20

D. 22

E. 24



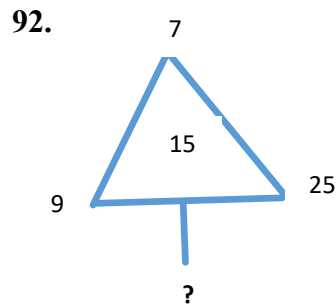
A. 0

B. 1

C. 2

D. 3

E. 4



A. 4

B. 12

- C. 23
- D. 16
- E. 36

**Sample H: Questions 93 - 97**

$$(Q * R)15 \rightarrow (15 - 3) \times 3 = 36$$

$$(R * Q)8 \rightarrow (8 \times 3) - 3 = 21$$

$$(Q * R)9 \rightarrow (9 - 3) \times 3 = 18$$

**93.**  $(Q * R)4 = ?$

- A. 1
- B. 2
- C. 3
- D. 6
- E. 9

**94.**  $(R * Q)36 = ?$

- A. 105
- B. 99
- C. 96
- D. 89
- E. 66

**95.**  $(Q * R)13 = ?$

- A. 7
- B. 30
- C. 36
- D. 40
- E. 45

**96.**  $(Q * R)10 = ?$

- A. 7
- B. 18
- C. 21
- D. 27
- E. 30

**97.**  $(R * Q)17 = ?$

- A. 14
- B. 39
- C. 42
- D. 48
- E. 51

**Sample I: Questions 98 – 100**



**98.**



- A. 2
- B. 3
- C. 4
- D. 5
- E. 6

**99.**



- A. 2
- B. 4
- C. 6
- D. 8
- E. 10

**100.**



- A. 12
- B. 14
- C. 16
- D. 18
- E. 20