ARADA SUB CITY EDUCATON OFFICE

MATHEMATICS FIRST MODEL EXAMINATION FOR GRADE 8

TIR 2017/ JANUARY 2025

Time Allowed: - 1 HOUR

NUMBER OF QUESTIONS: 40

GENERAL DIRECTIONS

THIS BOOKLET CONTAINS MATHEMATICS EXAMINATION. IN THIS EXAMINATION, THERE ARE A TOTAL OF 40 MULTIPLE CHOICE QUESTIONS. CAREFULLY SELECT THE BEST ANSWER AND BLACKEN ONLY THE LETTER YOUR CHOICE ON THE SEPARATE ANSWER SHEET AND THE EXAMINATION. PAPER CAREFULLY. USE ONLY PENCIL TO MARK YOUR ANSWERS. YOUR ANSWER MARK SHOULD BE HEAVY AND DARK, COVERING THE ANSWER SPACE COMPLETELY. PLEASE ERASE ALL UNNECESSARY MARKS COMPLETELY FROM YOUR ANSWER SHEET.

YOU ARE ALLOWED TO WORK ON THE EXAM FOR I HOUR. WHEN TIME IS CALLED, YOU MUST IMMEDIATELY STOP WORKING, PUT YOUR PENCIL DOWN, AND WAIT FOR FURTHER INSTRUCTIONS.

ANY FORM OF CHEATING OR AN ATTEMPT TO CHEAT IN THE EXAMINATION WILL RESULT IN AN AUTOMATIC DISMISSAL FROM THE EXAMINATION HALL AND CANCELLATION OF YOUR SCORE (S)

PLEASE MAKE SURE THAT YOU HAVE WRITTEN ALL THE REQUIRED INFORMATIOON THE ANSWER SHEET BEFORE YOU START TO WORK ON THE EXAMINATION.

DO NOT TURN THIS PAGE UNTIL YOU ARE TOLD TO DO SO.

INSTRUCTION: READ THE FOLLOWING QUESTION CAREFULLY AND CHOOSE THE CORRECT ALTERNATIVE ANSWER FOR THE FOLLOWING QUESTIONS

1. Which one of the following is equivalent to the set {4, 3, 6}

A. {4, 3} B. {a, b, c} C. ∅ D. {1, 2, 3, 4}

2. Which one of the following is finite set?

A. The set of natural numbers less than 10.

B. The set of all whole numbers.

C. The set of all whole numbers greater than 10

D. All odd natural numbers

3. If D $= \{a, b, c, \}$ then which one of the following is true?

A. $e \in$ D B. a ∈ D C. 0 ∈ D D. f ∈ D

4. If the number proper subset of set A is 7, then how many elements does a set 'A' have?

A. 8 B. 14 C. 3 D. 17

5. Which one of the following statement is true in the set of numbers?

A. 0.3 ∈ W B. 0 ∈ N C. 3.5 ∈ Z D. 8 ∈ N

6. Which one of the following is true?

A. -130 > -103 > -49 > -35 C. -35 > -49 > -103 > -130

B. -35 < -49 < -103 < -130 D. -103 < -130 < -35 < -49

7. What is the sum of the numbers -305 + (-1083) + 4800?

A. 3412 B. 6188 C. -3412 D. -6188

8. -583- (-3281) = ----------

A. -3864 B. 2698 C. 3864 D. -2698

9. Which one of the following statement is false?

A. The product of one numbers of negative factors is negative.

B. The sum of two opposite integers is one.

C. The difference of two even integers is always even integers.

D. The product of even and odd integers always even integers.

10. $-4 \times -320 \times 9840 \times 0 \times 23$ is equal to

A. -1280 B. 0 C. -29,440 D. 24,380

11. If we divided – 320 by -4 the result is

A. 80 B. -80 C. 60 D. 160

12. Which one of the following **<u>is not</u>** a term?

A. -3 B. $\frac{2x}{5}$ C. x + y D. $4ab^2$

13. Which one of the following pair of terms is like terms?

A. 3a and -6 C. $12\ x^2y^2$ and y^2x^2

B. $4x^2$ z and $\frac{3}{2}\ x^2$ D. 2ab and 2xyz

14. Which of the following value of 'x' satisfies the equation 2 (2-3x) = -2-2(x-3)?

A. 0 B. -1 C. $\frac{1}{2}$ D. 1

15. The solution of $\frac{x}{5}$ - x = $\frac{2}{3}$ x + 4 is

A. $\frac{-30}{11}$ B. $\frac{60}{11}$ C. $\frac{30}{11}$ D. - $\frac{60}{11}$

16. Which one of the following equations is equation of a vertical line?

A. y-3= 0 B. 3y - 4x=0 C. x+8=0 D. y-x =0

17. Which of the following is the slope of the line $\frac{3}{2}$x + $\frac{4}{5}$y= 0?

A. $\frac{3}{2}$ B. $\frac{15}{8}$ C. $\frac{8}{15}$ D. $\frac{-15}{8}$

18. Which one f the following points lies in quadrant IV?

A. (-3,2) B. (13,8) C. (2,-4) D. (-1,-1)

19. Abebe 10 years old than his brother. How old is Abebe if the sum of their age is 40?

A. 15 B. 25 C. 30 D. 20

20. Which one of the following statement is **FALSE** about the set of numbers denoted by N,W,Z and Q?

A. $N \subseteq W$ B. $N \subseteq Z^+$ C. $Q \subseteq Z$ D. $W \subseteq Z$

21. Evaluate the following absolute value expression $7 + |3 - 2x| + |5x - 7|$ when x = -3

A. 20 B. 18 C. 21 D. 38

22. What is the solution set of absolute value equation $|5 - 2x| - 11 = 0$?

A. {-3, -8} B. {-3, 8} C. {3, 8} D. {3, -8}

23. Which one of the following rational numbers is written in ascending order?

A. $\frac{2}{3}, \frac{1}{4}, \frac{5}{6}, \frac{3}{2}$ B. $\frac{1}{4}, \frac{5}{6}, \frac{2}{3}, \frac{3}{2}$

C. $\frac{1}{4}, \frac{2}{3}, \frac{5}{6}, \frac{3}{2}$ D. $\frac{2}{3}, \frac{5}{6}, \frac{1}{4}, \frac{3}{2}$

24. If Birr 1,300 is invested at 5 % simple interest per annum, and then what is simple interest after 6 years?

A. Birr 780 B. Birr 390 C. Birr 630 D. Birr 490

25. Which one of the following pairs of linear equations in one variable **is not** equivalent in the set of integers?

A. 2x -3 =5 and x -4 = 0

B. $\frac{1}{2}x = 3$ and 2x – 10 = 2

C. -3x + 4 = 0 and 6x + 8 = 0

D. 2 – 5x = 7 and x + 1 =0

26. What is the solution set of the inequality $\frac{5y-8}{2} < \frac{9+4y}{3}$

A. $\{y < 42: y \in Q\}$ B. $\{y > 42 : y \in Q\}$

C. $\{y < 6 : y \in Q\}$ D. $\{y > 6 : y \in Q\}$

27. In the Cartesian coordinate plane, if $x < 0$ and $y > 0$, then in the which quadrant does the point (x , y) lie ?

A. First quadrant B. Fourth quadrant

C. Third quadrant D. Second quadrant

28. If the point P(2,3) and Q (1, 0) lies on the graph of ax + by = 8 , then what is the value of a and b?

A. a = 8 & b = $\frac{-8}{3}$ B. a = -8 & b = $\frac{8}{3}$

C. a = 8 & b = $\frac{8}{3}$ D. a = - 8 & b = $\frac{-8}{3}$

29. What is the solution set of the equation $3x - (7 - 5x) = \frac{1}{2} (16x - 14)$ $x \in Q$?

A. {0} B. { } C. Q D. {6}

30. If the point (k , -4) lies on the line 2x + y = 8, then Find the value of k?

A. 6 B. 7 C. 2 D. 5

31. $(\frac{3}{4} - \frac{1}{3}) \div (\frac{1}{4} + \frac{2}{3})$ is equal to

A. $\frac{7}{9}$ B. $\frac{5}{9}$ C. $\frac{11}{5}$ D. $\frac{5}{11}$

32. Find the length of sides of square whose area is 196 cm^2 .

A. 14cm B. 13cm C. 36cm D. 98cm

33. If $(3.25)^2 = 10.56$ then find $\sqrt{1056}$?

A. 325 B. 3.25 C. 3250 D. 32.5

34. What is the volume of the cube if the side length is 8 cm?

A. $64cm^3$ B. $16cm^3$ C. $512cm^3$ D. $10cm^3$

35. The Value of $\sqrt[3]{\frac{27}{125}}$ is

A. $\frac{4}{3}$ B. $\frac{3}{5}$ C. $\frac{8}{5}$ D. $\frac{5}{3}$

36. If 'x' is an integer, then the solutions set of the equations

$4(x-5) = 7-5(1-2x)$ is

A. $\{\frac{-3}{11}\}$ B. $\{\frac{-11}{3}\}$ C. Z D. $\emptyset$

37. The solution set of the inequality $\frac{1}{3}x - 1 < -3x - 3$ is

A. $\{x: x < \frac{3}{5}\}$ B. $\{x: x < \frac{-3}{5}\}$

C. $\{x: \frac{-9}{5} < x < \frac{3}{5}\}$ D. $\{x: x > \frac{-3}{5}\}$

38. The sum of three consecutive even integers is 144. Find the largest integers?

A. 50 B. 72 C. 48 D. 46

39. Five times a certain natural number is decreased by two times the number is less than 12 . What are the possible values of this number?

A. { 0,1,2,3} B. { 1,2,3 } C. { 1,2,3,4 } D. { 0,1,2,3,4 }

40. The sum of the mother and her daughter is 68 years. The mother is 22 years older than her daughter. How old is her mother?

A. 45 years B. 23 years C. 98 years D. 66 years