

MILLENNIUM SECONDARY AND PREPARATORY SCHOOL 2012 E.C GRADE 12
APTITUDE MATHS OPEN BOOK MODEL EXAM -ONE

CHOOSE THE BEST ANSWER FROM THE GIVEN ALTERNATIVES

1. Serkalem does a work in 10 days and Tsion does the same work in 15 days. In how many days they together will work the same work?
 A. 5days **B. 6days** C. 8days D. 9days
2. Samuel and Tinsae are working on an assignment. Samuel takes 6hours to type 32 pages on a computer, while Tinsae takes 5hours to type 40 pages. How much time will they take working together on two different computers to type an assignment of 110 pages?
 A. 7hours and 30 minutes B. 8hours
C. 8hours and 15 minutes D. 8hours and 25 minutes
3. Three people can complete a piece of work in 24, 6, and 12 days respectively. Working together they will complete the same work in ____ days.
 A. $\frac{1}{24}$ day B. $\frac{7}{24}$ day **C. $\frac{24}{7}$ days** D. 4days
4. One is different among 74, 24, 82, 61, 10, 4. Which number is different? A. 61 B. 24 C. 10 D. 82
5. The square root of $(\sqrt{\quad})(\sqrt{\quad})$ is A. $\sqrt{\quad}$ B. 2 C. 4 D. $\sqrt{\quad}$

6. The value of $\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\quad}}}}}$ is
 A. 4 B. 6 C. 8 D. 10

7. When evaluated $\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\quad}}}}}$ is equal to: A. 4 B. 6 C. 8 D. 10

8. If $\sqrt{\quad}$, then 6 A. 41 B. 42 C. 43 D. 44
9. If $y = 5$, then what is the value of $10y\sqrt{\quad}$? A. $\sqrt{\quad}$ B. 100 C. $\sqrt{\quad}$ D. 500
10. The difference between the place values of 7 and 3 in the number 527,435 is equal to:
 A. 4 B. 5 C. 45 D. 6970

11. In which of the following is the first number of expression equal to the second number or expression? A. $(\quad)(\quad): 7$ C. $25(26) + 26(75): 2500$

- B. $-(-12) - 5: 5 + (-8) + 12$ D. $(\quad)(\quad): -E. \text{None}$
12. The closest value of the product of 480 and 500 is-----
 A. 20,000 B. 40,000 C. 200,000 D. 400,000 E. None

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13. Divide 48 by a quarter and add 7. What is the resulting number?

A. 192 B. 199 C. 12 D. 19 E. NONE

14. Suppose that -1×0

QUANTIT Y A	QUANTITY B
$X^3 + 1$	$X^2 + 2X + 2$

Which one is true? A. Quantity A is greater than quantity B

B. Quantity A is less than Quantity B

C. The two quantities are equal

D. The relationship cannot be determined E. None

15. Which of the following is equal to

=

A. B. C. D. E. None

16. In the sequence -24, - 18, -12, - 6... each number after the first is 6 greater than the preceding number.

Which of the following could not be a number in the sequence?

A. 648 B. 762 C. 963 D. 1104 E. None

17. Consider the following two quantities

QUANTITY A	QUANTITY B
$2^{28} + 2^{28} + 2^{28}$	2^{29}

Which one of the following true?

A. Quantity A is greater than quantity B C. Quantity A is less than quantity B B. The two

quantities are equal D. The relationship cannot be determined

18. In a survey, of people said that they preferred to use self – service restaurants. In contrast, of the people indicated that they preferred to be served by a waiter/waitress. The remaining 150 respondents stated they had no clear preference. How many people participated in the survey?

A. 480 B. 390 C. 360 D. 300 E. None

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19. Which one of the following sums is the LARGEST?

A. $\frac{5}{6} + \frac{7}{17}$ B. $\frac{6}{7} + \frac{5}{11}$ C. $\frac{7}{8} + \frac{3}{7}$ D. $\frac{8}{9} + \frac{1}{3}$ E. N

20. If m is a number between 0 and 1, which of the following is not more than m ?

A. $2m$ B. $\frac{1}{m}$ C. m^2 D. $\sqrt{m}$ E. None

21. Esayas, Marta and Samuel have their own collections of books .If the ratio of Esayas books to those Marta is 3 to 2 and ratio of Marta books to those of Samuel is 5 to 1. What is the ratio of Esayas to Samuel books?

A. 2:15 B. 5:2 C. 10:3 D. 15:2 E. None

22. If $a^2b = ab + 1$ and $a^2b = a + b + 2$, then $\frac{a}{b} =$

A. 22 B. 25 C. 52 D. 27

23. Which of the following is divisible by 6?

A. 13216 B. 37143 C. 111111 D. 472812

24. Which of the following is GCF of 28, 60 and 120?

A. 2 B. 4 C. 3 D. 840

25. If x and y are prime numbers greater than 2, which of the following must be true?

I: $x + y$ is even

II: xy is odd

III: $x^2 - y^2$ is even

A. I and II only C. II and III only

B. I and III only D. I, II and III

26. If $y = \frac{1}{x}$ and $x = \frac{1}{y}$. What is Y in terms of x ?

B. $1+x$ C. $1 + \frac{1}{x}$ D.

A.

27. If the value of the following expression $(1 + \frac{m}{n}) / (\frac{o}{p})$ is to be halved by doubling exactly one of the five

numbers l, m, n, o, or p. Which one should be doubled?

A. P B. o C. n D. m

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28. If the radius of a circle inscribed in a square is k, then the perimeter of the square is A. $\sqrt{2}k^2$

B. $4k^2$ C. $4k$ D. $8k$ 29. If $x = 3$ is one solution of the equation $x^2 + rx - 20 = 4$ then $r =$

A. 5 B. -8 C. 3 D. 8

30. Which of the following expression has an even integer value for all integers a and c? A.

$8a + 2ac$ B. $3a + 9c$ C. $5a + 15c$ D. $a + 2c$

31. When 80,000 is written as 8×10^n , what is the value of n?

A. 2 B. 3 C. 4 D. 5

32. What is the sum of the following values?

() A. 1 B. 2 C. 3 D. 4 33. If 75% of x is equal to p% of 25, where $p > 0$, what is

the value of

A. B. C. D.

34. What is the value of $\sqrt{100}$? A. 2 B. 4 C. 10 D. 100 35. If 5 is more than 20, what is the value of x?

A. 5 B. 10 C. 25 D. 50

36. Which of the following is less than z if z is a number between 0 and 1?

A. B. $\sqrt{z}$ C. $2z$ D.

37. What is the value of $x+10$, if $x = -10$?

A. -10 B. 4 C. 10 D. 25

38. If $\sqrt{16} = 4$, what is the value of $\sqrt{64}$? A. 1 B. 2 C. 3 D. 4

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39. When a number is divided by 2 the result is equal to the result when that same number is divided by 4.
What is that number?
A. -2 B. 0 C. 2 D. 4
40. Which of the following is the average of the first 10 odd numbers?
A. 10 B. 15 C. 20 D. 25
41. A number is called “even-odd” if it is halfway between an even integer and an odd integer. If x is an even odd number, which of the following must be true?
I. $2x$ is an integer.
II. $2x$ is even-odd.
III. x is halfway between two even integers
A. I only B. II only C. I and II only C. II and III only
42. The arithmetic mean of p and q is 15, and the average of y and x is 15. What is the average of p , y , x , and q ? A. 7.5 B. 15 C. 22.5 D. 30
43. What is the value of E , if $ABCDE$ is a five digit positive number divisible by 5 and 10?
A. 0 B. 1 C. 2 D. 5
44. If the sum of three consecutive integers is 33, what is the middle integer?
A. 9 B. 10 C. 11 D. 12
45. If three students have scores x , y , and 80, with their sum equal to 180, what is the average of the three scores?
A. 60 B. 70 C. 80 D. 90
46. When 5 times the number x is added 12, the result is 32. What number results when 2 times x is added to 7?
A. -15 B. -5 C. 5 D. 15
47. Hawa used $\frac{1}{4}$ of her monthly salary for buying teff and $\frac{1}{2}$ more than the price of teff for house rent. What fraction of her monthly salary did hawa use that month for the teff and rent combined?
A. $\frac{1}{3}$ B. $\frac{7}{12}$ C. $\frac{5}{8}$ D. $\frac{3}{4}$

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48. If as many 7-metre pieces of wire as possible are cut from a wire that is 36 meters long, what is the total length of the wire that is left over?
- A. 1m B. 2m C. 3m D. 4m
49. The price for one quintal of sugar is birr 5,800 and it decreases at the rate of birr 2 every three months. The price for one quintal of coffee is birr 4,200 and it increases at the rate of birr 8 every four months. How many years will it take for the two commodities to become equal in price?
- A. 10 B. 20 C. 50 D. 60

Answer questions 50 – 55 based on the hypothetical data given below.

Annual income and expenditure of five schools

School	Income (in ETB)	Expenditure (in ETB)
A	1,200,000	1,000,000
B	1,400,000	1,200,000
C	1,000,000	1,100,000
D	2,000,000	1,600,000
E	1,600,000	1,100,000
Sum	7,200,000	6,000,000

50. The average annual income of the five schools in ETB is
- A. 1,200,000 B. 1,400,000 C. 1,300,000 D. 1,440,000
51. The difference between the average annual income and the average annual expenditure of the five schools in ETB is A. 100,000 B. 240,000 C. 200,000 D. 1,200,000
52. Which one of the following is NOT TRUE about the income expenditure data given above? A.
- The difference between income and expenditure was the highest for school E.
- B. All schools have managed to keep their expenditure lower than their income.

C. Most of the schools had annual income which was larger than the average annual income of the five schools combined.

D. Only one school had an annual expenditure which was larger than the average annual expenditure of the five schools combined

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53. How many schools had higher rate of saving compared to the rate of the saving from the total income of all school?

A. 1 B. 2 C. 3 D.4

54. If each school was expected to save at least 10% of its income how many schools have met the expectation?

A. 1 B. 2 C. 3 D.4

55. Assume that one school will be awarded based on the proportion of saving to the income generated. Which school do you think deserves the award?

A. B B. C C. D D. E

Complete the following series according to that it will continue the same pattern and replace the question

mark. 56. If a series is 2, 2, 5, 13, 28,?, then what will replace the question mark?

A. 47 B. 68 C. 50 D. 52

57. 5, 2, 7, 9, 16, 25, then what is the next term?

A. 41 B. 43 C. 45 D. 48

58. 5, 6, 9, 15,?, 40... what is the number replaced by the question mark?

A. 21 B. 23 C. 25 D. 27

59. 4, 10,?, 82, 244,730 what is the number marked by question mark?

A. 24 B. 28 C. 77 D.218

60. 0.5, 0.55, 0.65, 0.8, then what is the next term? A. 0.7 B. 0.9 C. 0.95D. 1

61. At the baseball game, Henok was sitting in seat 253. Kemal was sitting to the right of Henok in seat 254. In the seat to the left of Henok was Kebede. Tola was sitting to the left of Kebede.Which seat is Tola sitting in?

A. 251 B. 254 C. 255 D. 256

62. Due to COVID-19 pandemic Nurse Selam has worked more night shifts in a row than Nurse Hayat who has worked five. Nurse Sofia has worked fifteen night shifts in a row, more than nurses Selam and Hayat combined. Nurse Anteneh has worked eight night shifts in a row, less than Nurse Selam. How many night shifts in a row has nurse Selam worked?

A. 8 B. 9 C. 10 D. 11

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63. Which group of letters is different from the others?

A. BDW B. IKP C. GIQ D. DFU

64. Which group of numbers is different from the others?

A. 15:46 B. 12:37 C. 9:28 D. 8:33

65. Soliana went 15kms to the west from her house, then turned left and walked 20kms. She then turned east and walked 25kms and finally turning left covered 20kms. How far was she from her house? A. 10kms B. 20kms C. 30kms D. 40kms

66. A is 60m south west of B. C is 60m south east of B. Then, C is in which direction of

A? A. West B. North east C. South D. East

67.

A. 0 B. 1 C. D.

68. If , then which of the following is true?

A. B.
/ C. / D.

69. If , then what is the value of y?

A. B. C. D.

70. 60% of 264 is the same as:

A. 10% of 44 B. 15% of 1056 C. 30% of 132 D. 20% of 600

71. What percent of 7.2kg is 18gms?

A. 0.025% B. 25% C. 2.5% D. 0.25%

72. What percent of a day is 3 hours?

A. $25\frac{1}{2}\%$ B. $33\frac{1}{2}\%$ C. $37\frac{1}{4}\%$ D. $61\frac{1}{4}\%$

73. 0.15% of $100\frac{1}{3}$ of 10,000 is equal to

A. 0.05 B. 5 C. 105 D. 150

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74. 4598 is 95% of what number?

A. 4800 B. 4840 C. 4850 D. 4880

75. The average of 2, 7, 6 and x is 5 and the average of 18, 1, 6, x and y is 10. What is the value of y?

A. 5 B. 10 C. 20 D. 30

76. If a, b, c, d, e are five consecutive odd numbers, their average is equal to

A. B. C. D.

77. The average of a non-zero number and its square is 5 times the number. What is the number?

A. 9 B. 17 C. 29 D. 295

78. If A: B = 3:4 and B: C = 8:9, then A: C is equal to

A. 1:3 B. 3:2 C. 2:3 D. 1:2

79. If 15% of x = 20% of y, then x: y is equal to

A. 4: 3 B. 3:4 C. 3:2 D. 7:4

80. When evaluated,

is equal to _____

A. 2 B. 4 C. 6 D. 8

81. If the angles of a triangle are in the ratio 1: 2 : 3, then the sides are in the ratio of A. $1:\sqrt{2}$: 2

B. $\sqrt{1} : \sqrt{1} : 1$ C. $\sqrt{1} : 1 : 2$ D. $1 : \sqrt{1} : \sqrt{1}$

Dear Students!

Until
The
Killer

Covid-19 Pandemic Is Controlled Or Ended, Stay At Home! Keep Your Hygiene! Keep Physical Distance! Keep Away Of Hand Shaking! Keep Far From Coughing Or Sneezing Individuals! Keep Your Study Area Clean And Study Hard At Your Home!

I Have Compiled These Questions To Help You There At Your Home. Please Study Hard And Do The Questions To The Best Your Effort!!!

I hope we may have face to face class to solve your difficulties or we may find other mechanisms to answer any questions you have.

Best Regards

Abebe Endale

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