

Scholastic Aptitude Test, 2016 EC, model exam, Arada

Grade 12 · Aptitude · 2016 E.C.

MARKING KEY: CONFIDENTIAL

Time allowed: 120 minutes

Questions: 49

Total marks: 49

Sit this paper online with instant scoring, free on Temari.et.

temari.et/exam-prep/papers/grade-12-aptitude-2016-model

1. NATIVE: FOREIGN:: (1)

A. LOCAL: IMPORT

B. DOMESTIC: HOMEGROWN

C. ✓ NAÏVE: SOPHOSITICATED

D. MEAN: UNKIND

Answer: C

"Native" and "foreign" are antonyms. Similarly, "naïve" and "sophisticated" (misspelled as "sophositicated") are antonyms.

2. BRACELET: WRIST: (1)

A. SHOE: LEG

B. WATCH: ARM

C. STOCKINGS: GLOVE

D. ✓ BELT: WAIST

Answer: D

A bracelet is worn around the wrist, just as a belt is worn around the waist.

3. LEARN: STUDY: (1)

A. KEEP: AGREE

B. RAISE: ACCUMULATE

C. ENCOMPASS: PERVADE

D. ✓ FIND: SEARCH

Answer: D

The relationship is of action and result: you study in order to learn, and you search in order to find.

4. SAND: GLASS: (1)

A. SEED: FLOWER

B. COTTON: WOOL

C. ✓ TREE: PAPER

D. STOVE: OVEN

Answer: C

Sand is the raw material used to manufacture glass, just as tree (wood) is the raw material used to manufacture paper.

5. _____ 8. AESTHETICS: BEAUTY: (1)

A. ✓ EPISTEMOLOGY: KNOWLEDGE

B. LOGISTICS: TRUTH

C. ETHICS: SOCIETY

D. RHETORIC: MUSIC

Answer: A

Aesthetics is the branch of philosophy that studies beauty, while epistemology is the branch of philosophy that studies knowledge.

6. The exam committee has already chosen Martha because she was proficient in the use of computer. (1)
- A. adequate
B. ✓ **skilled**
C. smart
D. sincere

Answer: B

In this context, "proficient" means being well-advanced, skilled, or expert in a particular field or activity.

7. The new trained worker was fast becoming an indispensable member of the technique department , so they had no choice but to offer him a higher salary to stay on. (1)
- A. creative
B. useless
C. active
D. ✓ **crucial**

Answer: D

"Indispensable" means absolutely necessary or essential, making "crucial" the closest synonym.

8. The manager of the company refuses to resign, intending to weather the storm (1)
- A. criticize someone
B. ✓ **survive a crisis**
C. mislead the staff
D. guess correctly

Answer: B

The idiom "weather the storm" means to successfully reach the end of a very difficult situation or survive a crisis.

9. Many people struggle to make ends meet (1)
- A. ✓ **earn just enough to live**
B. be healthy
C. be wealthy
D. avoid trouble

Answer: A

The idiom "make ends meet" means to earn just enough money to pay for one's essential living expenses.

10. SINCERE (1)
- A. ✓ **dishonest**
B. dissent
C. genuine
D. disapprove

Answer: A

This section of the exam asks for antonyms. The antonym of "sincere" (genuine, honest) is "dishonest".

11. EXHAUSTIVE (1)
- A. conserving
B. ✓ **incomplete**
C. indecisive
D. strong

Answer: B

"Exhaustive" means fully comprehensive and complete, so its opposite (antonym) is "incomplete".

12. IMMEDIATE (1)
- A. ✓ **future**
B. limited
C. multiple
D. complex

Answer: A

"Immediate" refers to the present or near future/past, while "future" refers to a time yet to come, serving as its opposite.

13. RENAISSANCE

(1)

- A. ✓ regressing B. revival
C. rebirth D. reawakening

Answer: A

"Renaissance" represents rebirth, revival, and progress, whereas "regressing" represents moving backward, making it the antonym.

14. TERMINATE

(1)

- A. depart B. end
C. ✓ begin D. hasten

Answer: C

The verb "terminate" means to bring to an end, so its opposite (antonym) is to "begin".

15. _____ deny:: accept: reject

(1)

- A. understand B. ✓ acknowledge
C. assume D. refuse

Answer: B

The relationship between "accept" and "reject" is antonymous. Therefore, the blank must be the antonym of "deny", which is "acknowledge".

16. Surplus: abundance:: deficit: _____

(1)

- A. enough
B. efficiency
C. amount
D. ✓ shortage

Answer: D

"Surplus" and "abundance" are synonyms. Therefore, the synonym for "deficit" is "shortage".

17. Potent: powerful: Lethal:_____

(1)

- A. ✓ deadly B. flagrant
C. mean-spirited D. crass

Answer: A

"Potent" and "powerful" are synonyms, meaning "lethal" must be paired with its synonym, which is "deadly".

18. Mount is to horse as _____ is to train

(1)

- A. drive B. ride
C. lift D. ✓ board

Answer: D

To get onto a horse is to "mount" it, while the appropriate action to get onto a train is to "board" it.

19. Mend: sewing: edit: _____

(1)

- A. repair B. makeshift
C. ✓ corret D. darn

Answer: C

Mending is a process done by sewing, while editing (represented by "edit") is a process done by correcting (misspelled as "corret").

20. Which of the following two statements prove that " Dagimawit and Goitom are married"?

(1)

- A. Dagmawit is married to Samson's only brother.
B. Dagmawit married her high school sweet heart.
C. Goitom and Dagmawit love each other.
D. Samson has the same parents as Goitom.

A. B and C

B. ✓ A and D

C. C and D

D. A and C

Answer: B

If Dagmawit is married to Samson's only brother (A) and Samson has the same parents as Goitom (meaning Goitom is Samson's brother, and thus his only brother) (D), then Dagmawit is married to Goitom.

21. Which of the following two statements prove that " Aster is a child"?

(1)

- A. Aster lives with her parents.
B. Aster is the little sister of Andargie.
C. Andargie has just turned 12.
D. Andargie is still in primary school.

A. C and D

B. A and C

C. B and D

D. ✓ B and C

Answer: D

If Aster is the little sister of Andargie (B) and Andargie has just turned 12 (C), Aster must be younger than 12, which logically proves she is a child.

22. Which of the following two statements prove that Jemila is a pilot?

(1)

- A. Jemila loves Ethiopia.
- B. Jemila's father is a professor.
- C. Jemila's brother is a pilot.
- D. Jemila has the same job as her brother.

A. A and C

B. B and C

C, ✓ C and D

D. A and D

Answer: C

If *Jemila's brother is a pilot (C)* and *Jemila has the same job as her brother (D)*, it logically follows that *Jemila is also a pilot*.

23. *Lions are rather reticent about expanding their energy in hunting. More than three quarters of kills are made by lionesses holding front position and carefully scanning ahead. The cubs lag playfully behind and the males bring up the rear and walk slowly with their massive heads nodding with each step as if they were bored with the whole matter. With lionesses' busy hunting, the male functions as guard for the cubs, protecting them particularly from hyenas.*

(1)

According to the passage how the lionesses hunt their prey?

A. ✓ cautiously

B. reticently

C. carelessly

D. reluctantly

Answer: A

The passage states that the lionesses make the kills by "carefully scanning ahead," which means they hunt cautiously.

24. *Lions are rather reticent about expanding their energy in hunting. More than three quarters of kills are made by lionesses holding front position and carefully scanning ahead. The cubs lag playfully behind and the males bring up the rear and walk slowly with their massive heads nodding with each step as if they were bored with the whole matter. With lionesses' busy hunting, the male functions as guard for the cubs, protecting them particularly from hyenas.* (1)

Based on the above passage, the male lions are unwillingness for hunting. What is the reason?

- A. they want to train their cubs and lionesses.
- B. ✓ **they want to save their energy for other purposes.**
- C. they are so lazy.
- D. They afraid their prey.

Answer: B

According to the first sentence of the passage, lions are "reticent about expanding their energy in hunting," which indicates they want to save their energy.

25. *Lions are rather reticent about expanding their energy in hunting. More than three quarters of kills are made by lionesses holding front position and carefully scanning ahead. The cubs lag playfully behind and the males bring up the rear and walk slowly with their massive heads nodding with each step as if they were bored with the whole matter. With lionesses' busy hunting, the male functions as guard for the cubs, protecting them particularly from hyenas.* (1)

Lionesses move for searching food :

- A. with their male partner
- B. with their cubs only
- C. ✓ **with their cubs and male partners**
- D. all alone the lionesses themselves

Answer: C

The passage describes the hunting procession: the lionesses are in the front, the cubs lag playfully behind, and the males bring up the rear. Thus, they move together with their cubs and male partners.

26. *Lions are rather reticent about expanding their energy in hunting. More than three quarters of kills are made by lionesses holding front position and carefully scanning ahead. The cubs lag playfully behind and the males bring up the rear and walk slowly with their massive heads nodding with each step as if they were bored with the whole matter. With lionesses' busy hunting, the male functions as guard for the cubs, protecting them particularly from hyenas.* (1)

The male adult lions guard their cubs from_____

- A. their own species
- B. other wild life
- C. ✓ **hyenas rather than other animals**
- D. hyenas as equal as other animals

Answer: C

The passage specifies that the male's function is to protect the cubs "particularly from hyenas," meaning they guard them against hyenas more than other threats.

27. Which one of the following is the quadrant that the common solution of the equations $2y - 3x = 6$ and $y - x = 0$? (1)

- A. One
- B. Two
- C. ✓ **Three**
- D. Four

Answer: C

Substituting $y = x$ into $2y - 3x = 6$ gives $2x - 3x = 6$, so $x = -6$ and $y = -6$. Both coordinates are negative, which lies in Quadrant Three.

28. Which one of the following intervals is the set of all possible values of x for which $(x, -6)$ is a solution to the system of inequalities $\begin{cases} 2x - y \geq 4 \\ x + y \geq 2 \end{cases}$? (1)

A. $[9, \infty)$
C. $[9, 12]$

B. ✓ $[8, \infty)$
D. $[6, \infty)$

Answer: B

Substituting $y = -6$ into the system of inequalities yields $2x - (-6) \geq 4 \implies x \geq -1$ and $x + (-6) \geq 2 \implies x \geq 8$. The intersection of these solutions is $x \geq 8$, which is the interval $[8, \infty)$.

29. A fair 12 – faced die with faces numbered 1 to 12 is to be rolled once. Then, what is the probability of rolling a number that is Not prime? (1)

A. ✓ $\frac{7}{12}$
C. $\frac{5}{6}$

B. $\frac{1}{2}$
D. $\frac{3}{4}$

Answer: A

The prime numbers from 1 to 12 are $\{2, 3, 5, 7, 11\}$ (5 numbers). Thus, there are $12 - 5 = 7$ non-prime numbers, making the probability of rolling a non-prime number $7/12$.

30. In a certain school if the ratio of teachers to students is 2 to 23. Which one of the following can be the total number of teachers and students in the school? (1)

A. 430
C. ✓ 450

B. 440
D. 460

Answer: C

The ratio of teachers to students is 2:23, so the total number of people must be a multiple of $2 + 23 = 25$. Among the choices, only 450 is divisible by 25.

31. The unit's digit(or one'splace) of the number 123^{123} is :- (1)

A. 1
C. ✓ 7

B. 3
D. 9

Answer: C

The units digit of powers of 3 repeats every 4 powers: 3, 9, 7, 1. Since $123 \equiv 3 \pmod{4}$, the units digit of 123^{123} is the same as that of 3^3 , which is 7.

32. Which of the following linear inequalities define the domain of $\sqrt{x - y - 2} + \log(x + y - 4)$? (1)

A. ✓ $4 - x < y \leq x - 2$
C. $x - 2 \leq y < 4 - x$

B. $x - 4 < y \leq x - 2$
D. $x - 2 \leq y < x - 4$

Answer: A

For the square root to be defined, $x - y - 2 \geq 0 \implies y \leq x - 2$. For the logarithm to be defined, $x + y - 4 > 0 \implies y > 4 - x$. Combining these gives the domain $4 - x < y \leq x - 2$.

33. Consider the following table. Then, which one of the following relation is true between A and B? (1)

A table with two columns and two rows:

"Quantity A"	"Quantity B"
$4^{\{11\}} + 4^{\{11\}} + 4^{\{11\}} + 4^{\{11\}}$	8^8

- A. Quantity A is less than Quantity B.
B. The relationship can Not be determined.
C. Quantity B is less than quantity A.
D. ✓ The two quantities are equal.

Answer: D

Quantity A simplifies to $4 \times 4^{11} = 4^{12} = (2^2)^{12} = 2^{24}$. Quantity B simplifies to $8^8 = (2^3)^8 = 2^{24}$. Therefore, the two quantities are equal.

34. The number 1 up to 6 are used to form six-digit numbers. What is the total number of these formed numbers whose sums of all adjacent digits is odd? (1)

- A. 36
B. ✓ 72
C. 108
D. 144

Answer: B

For the sum of any two adjacent digits to be odd, the parities of the digits must alternate. There are 3 odd and 3 even digits, giving two possible patterns: O-E-O-E-O-E or E-O-E-O-E-O. For each pattern, there are $3! \times 3! = 36$ arrangements, yielding a total of $36 + 36 = 72$ numbers.

35. If the one-fifth of one-third of a number is 6, then what is seven-tenth of the number? (1)

- A. 24
B. 36
C. ✓ 63
D. 42

Answer: C

If $\frac{1}{5} \times \frac{1}{3} \times x = 6$, then $x = 90$. Seven-tenths of 90 is $\frac{7}{10} \times 90 = 63$.

36. The sum of the first five composite numbers is: (1)

- A. 34
B. 35
C. 36
D. ✓ 37

Answer: D

The first five composite numbers are 4, 6, 8, 9, and 10. Their sum is $4 + 6 + 8 + 9 + 10 = 37$.

37. The sum of the ages of the mother and her daughter is equal to sixty years. Six years ago the age of the mother was five times the age of her daughter. What will be the age of the daughter Seven years from now? (1)

- A. ✓ 21
B. 22
C. 23
D. 24

Answer: A

Let the daughter's current age be D . The mother's current age is $60 - D$. Six years ago, $(60 - D) - 6 = 5(D - 6) \implies 54 - D = 5D - 30 \implies 6D = 84 \implies D = 14$. Seven years from now, her age will be $14 + 7 = 21$.

38. If $8^{x-y} = 64$ and $2^{3x+3y} = 128$, then x is equal to :- (1)

- A. $\frac{1}{6}$
B. ✓ $\frac{13}{6}$
C. $\frac{4}{3}$
D. $\frac{11}{3}$

Answer: B

From $8^{x-y} = 64 = 8^2$, we get $x - y = 2$. From $2^{3(x+y)} = 128 = 2^7$, we get $x + y = 7/3$. Adding these two equations yields $2x = 13/3 \implies x = 13/6$.

39. A hemisphere whose volume is 3 has a radius $3y$. What is the volume of a sphere whose radius is $6y$? (1)
- A. 18
B. 24
C. 32
D. ✓ 48

Answer: D

The volume of a hemisphere of radius R_1 is $V_1 = \frac{2}{3}\pi R_1^3 = 3$. The volume of a sphere of twice the radius $R_2 = 2R_1$ is $V_2 = \frac{4}{3}\pi(2R_1)^3 = 8 \times \frac{4}{3}\pi R_1^3 = 16 \times (\frac{2}{3}\pi R_1^3) = 16 \times 3 = 48$.

40. $\frac{7^{16}-7^{15}}{7^{14}}$ is equal to: (1)
- A. 14
B. 21
C. ✓ 42
D. 7

Answer: C

Factoring out 7^{15} from the numerator gives $\frac{7^{15}(7-1)}{7^{14}} = 7^{15-14} \times 6 = 7 \times 6 = 42$.

41. If $0 < x < 1$, then which of the following is less than x ? (1)
- A. $\frac{1}{x}$
B. $\sqrt[3]{x}$
C. $\sqrt{x}$
D. ✓ x^3

Answer: D

When a number x lies in the interval $(0, 1)$, raising it to a power greater than 1 results in a value smaller than the number itself, so $x^3 < x$.

42. When n is divided by 12, then the remainder is 6. Then, what is the remainder when n is divided by 6? (1)
- A. ✓ 0
B. 1
C. 2
D. 4

Answer: A

We can write $n = 12k + 6$ for an integer k . Since $12k + 6 = 6(2k + 1)$, n is a multiple of 6, and thus the remainder when n is divided by 6 is 0.

43. The number that is $\frac{2}{3}$ of 60 is what fraction of 80? (1)
- A. $\frac{1}{6}$
B. $\frac{1}{3}$
C. ✓ $\frac{1}{2}$
D. $\frac{3}{4}$

Answer: C

First, $\frac{2}{3}$ of 60 is 40. Then, 40 is $\frac{40}{80} = \frac{1}{2}$ of 80.

44. Let the sequence is given as 1,3,5,7,9,1,3,5,7,9,1, ... If this sequence follows the pattern shown , then what is the 104^{th} term of the sequence? (1)
- A. 1
B. 3
C. 9
D. ✓ 7

Answer: D

The sequence repeats in a cycle of length 5: [1, 3, 5, 7, 9]. Since $104 \equiv 4 \pmod{5}$, the 104^{th} term is the 4th term in the cycle, which is 7.

48. DIRECTION: Questions 57 – 60 are based on the data given in the table below, which shows the annual income and expenditure of five men. Answer each of the questions below on the given data. (1)

Men	Income in Birr	Expenditure in Birr
P	140,000	120,000
Q	200,000	184,000
R	175,000	155,000
S	100,000	100,000
T	125,000	111,000
Sum	740,000	670,000

If one man will be awarded based on the proportion of saving to the income generated, which man do you think deserve the award?

- A. P and Q
B. Q and R
C. R
D. ✓ P

Answer: D

The proportion of saving to income (saving rate) is highest for P at $\frac{20,000}{140,000} \approx 14.28\%$, making P the one who deserves the award.

49. DIRECTION: Questions 57 – 60 are based on the data given in the table below, which shows the annual income and expenditure of five men. Answer each of the questions below on the given data. (1)

Men	Income in Birr	Expenditure in Birr
P	140,000	120,000
Q	200,000	184,000
R	175,000	155,000
S	100,000	100,000
T	125,000	111,000
Sum	740,000	670,000

The difference between the average annual income and average annual expenditure of the five individual in Birr is:-

- A. 140,000
B. ✓ 14,000
C. 70,000
D. 7,000

Answer: B

The difference between the average income and the average expenditure is equal to the total saving divided by the number of individuals, which is $(740,000 - 670,000)/5 = 70,000/5 = 14,000$ Birr.

END OF THE MARKING KEY

Sit this paper online at temari.et/exam-prep/papers/grade-12-aptitude-2016-model.

More exam papers are at temari.et/exam-prep/papers.

Generated on Tikimt 2, 2019 E.C. (October 12, 2026 G.C.) · Temari.et