

Aptitude, 2015 EC, entrance exam, version 1

Grade 12 · Aptitude · 2015 E.C.

MARKING KEY — CONFIDENTIAL

Time allowed: 120 minutes

Questions: 52

Total marks: 52

1. MAKE is to SANDWICH as DO is to (1)
- A. mistake
B. ✓ favor
C. decision
D. arrangement

Answer: B

The verb 'make' commonly collocates with 'sandwich' ('make a sandwich'), and similarly, 'do' collocates with 'favor' ('do a favor').

2. DAWN is to MORNING as DUSK is to (1)
- A. dusk
B. down
C. ✓ night
D. noon

Answer: C

Dawn is the transitional period that precedes and leads into the morning, whereas dusk is the transitional period that precedes and leads into the night.

3. PRO is to FOR as _____ is to AGAINST. (1)
- A. rom
B. com
C. ✓ con
D. dab

Answer: C

'Pro' is a prefix/preposition meaning 'for' or in favor of, while 'con' is its counterpart meaning 'against' (as in the phrase 'pros and cons').

4. ARCHAEOLOGIST is related to REMAINS in the same way as _____ is related to REASONS. (1)
- A. linguist
B. anarchist
C. scientist
D. ✓ analogist

Answer: D

An archaeologist is a specialist who studies or works with physical remains; similarly, an analogist is a person who reasons or works with analogies (reasons).

5. CLAW is related to BIRD in the same way as _____ is related to BEAR. (1)
- A. feet
B. fur
C. ✓ paw
D. finger

Answer: C

A bird's foot is characterized by its claws, while a bear's foot is called a paw.

6. WIN is related to RACE in the same way as BEAT is related to: (1)
- A. ✓ team
B. competition
C. game
D. referee

Answer: A

You 'win' a competition or 'race', while you 'beat' an opponent or 'team'.

7. DEN is related to LIONS in the same way as NEST is related to: (1)

- A. cows
- B. hyenas
- C. ✓ **birds**
- D. pigs

Answer: C

A den is the natural home or shelter of lions, just as a nest is the natural home or shelter of birds.

8. DECREE (1)

- A. rank
- B. power
- C. ✓ **verdict**
- D. hierarchy

Answer: C

A 'decree' is an official rule, order, or decision, which is synonymous with a 'verdict'.

9. BEREAVEMENT (1)

- A. happiness
- B. glee
- C. pleasure
- D. ✓ **sorrow**

Answer: D

'Bereavement' refers to the state of grief and mourning after a loss, which is synonymous with 'sorrow'.

10. CONJECTURE (1)

- A. fact
- B. ✓ **speculation**
- C. certainty
- D. rumor

Answer: B

A 'conjecture' is an opinion or conclusion formed on the basis of incomplete information, which is synonymous with 'speculation'.

11. ENFORCEMENT (1)

- A. forcefulness
- B. cogency
- C. ✓ **prosecution**
- D. involvement

Answer: C

'Enforcement' means the act of compelling observance of or compliance with a law or rule, which is closely synonymous with 'prosecution' in a legal executive sense.

12. TRANSGRESSION (1)

- A. change
- B. exchange
- C. defense
- D. ✓ **offense**

Answer: D

A 'transgression' is an act that goes against a law, rule, or code of conduct, which is synonymous with an 'offense'.

13. TENANT (1)

- A. ✓ **landlord**
- B. farmer
- C. peasant
- D. provincial

Answer: A

A 'tenant' is a person who occupies land or property rented from a landlord, making 'landlord' its direct antonym.

14. LENIENT

(1)

- A. ✓ strict B. common
C. easygoing D. committed

Answer: A

'Lenient' means permissive or merciful, which is the direct antonym of 'strict'.

15. MISERLY

(1)

- A. thrift B. ✓ extravagant
C. selfish D. saving

Answer: B

'Miserly' means stingy or hoarding money, which is the direct antonym of 'extravagant' (spending money excessively).

16. NASTY

(1)

- A. foul B. horrid
C. ✓ nice D. sociable

Answer: C

'Nasty' means highly unpleasant or unkind, which is the antonym of 'nice'.

17. Choose the word which does not fit the relation: summit, peak, pinnacle, ravine

(1)

- A. summit
B. peak
C. pinnacle
D. ✓ ravine

Answer: D

'Summit', 'peak', and 'pinnacle' all refer to the highest point of a mountain, whereas a 'ravine' is a deep, narrow valley or gorge.

18. Choose the word which does not fit: cave, barn, den, turf

(1)

- A. cave B. barn
C. den D. ✓ turf

Answer: D

'Cave', 'barn', and 'den' are all types of shelters or habitats, whereas 'turf' refers to grass and the surface layer of earth.

19. Choose the word which does not fit: mattress, pillow, carpet, pillowcase

(1)

- A. mattress
B. pillow
C. ✓ carpet
D. pillowcase

Answer: C

'Mattress', 'pillow', and 'pillowcase' are all items of bedding, whereas a 'carpet' is a floor covering.

20. Choose the word which does not fit: buck, doe, bull, boar

(1)

- A. buck
B. ✓ doe
C. bull
D. boar

Answer: B

'Buck', 'bull', and 'boar' are terms for male animals of their respective species, whereas 'doe' is a female deer.

21. *Political issues are the integral components of any big international event including sports. It is particularly true about the countries with specific political views or those involved in international conflicts. In case of Qatar hosting World Cup 2022, the political problem is caused by its relations, or rather no relations with Israel. In fact, Qatar does not recognize Israel as a state. Thus, Israel initiated a campaign against Qatar as the location for World Cup as a part of its interventions to isolate the activity of Hamas. The major slogans included anti-terrorist ideas were followed by fans and Israel supporters around the world. The idea is to prevent funding terrorism claiming that Qatar plays a significant role in financing terrorist organizations and awarding 2022 FIFA World Cup to this country would mean the support of terrorism. Still, despite this problem and some other aspects related to not following the FIFA code of ethics by Qatar, the preparation for the World Cup is going on.* (1)
- What is the big event mentioned in the passage?

- A. sports
B. ✓ 2022 world cup
C. political integrity
D. international conflicts

Answer: B

The passage discusses the political issues surrounding Qatar hosting the 2022 World Cup, making it the central big event mentioned.

22. *same passage* (1)
- One of the following is False according to the passage.
- A. Israel is among the countries with specific political views.
B. Qatar is among the countries involved in international conflicts.
C. ✓ Israel does not recognize Qatar as a state.
D. Hamas is the root cause for Israel to initiated a campaign against Qatar as the location for World Cup

Answer: C

The passage states that 'Qatar does not recognize Israel as a state.' Therefore, option C, which reverses this relation, is false according to the passage.

23. *same passage* (1)
- The pronoun 'this' in paragraph 2 line 4 refers to
- A. the 2022 FIFA World Cup
B. ✓ Qatar
C. Israel
D. the award

Answer: B

In the phrase 'awarding 2022 FIFA World Cup to this country,' the demonstrative adjective 'this' refers back to Qatar, which is the host country being discussed.

24. *Today's young people will be the stewards of our planet in the years to come, and the future of all life depends on them gaining the knowledge, skills and passion for nature necessary to transform humanity's relationship with the natural world and build a more sustainable future. If you are working with younger age groups or sensitive young people we advise viewing the videos before screening them in the classroom or assigning playlists for students to watch independently, in case of content or messaging that could cause distress. The explorable globe allows individual students, small groups or whole classes to embark on a voyage of discovery into the interconnected workings of our planet. As they follow connections around the planet, short videos pinned to the globe bring concepts and locations to life. Students may be assigned research tasks in the form of a topic presentation task or a quiz sheet, and through seeking the information required they will gain a valuable insight into the connections between topics and issues.* (1)

How are today's young people described in paragraph one?

- A. ✓ **that they are the agents of our planet in the years to come**
- B. that they are the agendas of our time
- C. that they depend on the future of all their life time
- D. that they do not have any contribution to the future of all life

Answer: A

The passage describes young people as 'the stewards of our planet,' which is synonymous with being the caretakers or 'agents' of the planet.

25. *My uncle had five children named, Tolani, Abebe, Lemma, Gile and Tena. Tolani, the middle child, is one of the two females. There is an exact age interval, three years, among each child. The first child, Abebe was born in 1960 E.C. Tena is younger than Tolani but older than Lemma. The other female is older than Tolani.* (1)

Who is the youngest child?

- | | |
|-------------------|-----------|
| A. ✓ Lemma | B. Tena |
| C. Gile | D. Tolani |

Answer: A

Since Abebe is the oldest (1st) and Tolani is the middle (3rd) child, the younger children must be Tena and Lemma. Since Tena is older than Lemma, Lemma must be the 5th and youngest child.

26. *same* (1)

Which of the following shows the correct order of the children in age from the youngest to the oldest?

- | | |
|---|--|
| A. ✓ Lemma, Tena, Tolani, Gile, and Abebe. | B. Abebe, Gile, Tolani, Tena, and Lemma. |
| C. Lemma, Tolani, Tena, Gile, and Abebe. | D. Abebe, Gile, Tena, Tolani and Lemma. |

Answer: A

The children's birth order from oldest to youngest is Abebe (1st), Gile (2nd), Tolani (3rd), Tena (4th), and Lemma (5th). Reversing this gives the youngest-to-oldest order: Lemma, Tena, Tolani, Gile, and Abebe.

27. *same*

(1)

How old is the middle child now? (Assuming current year? The problem says Abebe born 1960 E.C. We need current year? The exam is from 2015 E.C? Typically, E.C (Ethiopian Calendar) is about 7-8 years behind Gregorian. But the question likely expects to calculate from given information. The difference between years: children spaced 3 years. Middle child is Tolani, who is 3rd. Abebe born 1960, so the next births: 1963, 1966, 1969, 1972. Middle child is 3rd = born 1966 E.C. If the exam is taken in 2015 E.C, then age = 2015 - 1966 = 49 years. So answer 49. Options: 52, 49, 51, 48. So B. 49 years.

A. 52 years

B. ✓ 49 years

C. 51 years

D. 48 years

Answer: B

The children are spaced 3 years apart. With Abebe born in 1960 E.C., the middle child Tolani (the 3rd child) was born in 1966 E.C. (1960 + 3 + 3). In 2015 E.C., her age is 2015 - 1966 = 49 years.

28. *same*

(1)

What is the name of the other female?

A. Lemma

B. Tena

C. ✓ Gile

D. Tolani

Answer: C

The other female is older than Tolani, which means she must be either Abebe or Gile. Since Abebe is not in the options and is traditionally a male name, Gile is the other female.

29. Statement: A man looking at a photograph and said, 'This is the son of the only son of my mother.' Conclusion:

(1)

A. The man's mother has two sons.

B. ✓ The man is talking about his own son.

C. The man is talking about himself.

D. The man is talking to the one on the photograph.

Answer: B

The 'only son of my mother' for a male speaker refers to the man himself. Therefore, the 'son of the only son of my mother' refers to the man's own son.

30. All smokers chew chat. All chat chewers drink alcohol. Which of the following statements must be true?

(1)

A. All chat chewers are smokers.

B. All that drink alcohol chew chat.

C. All alcohol drinkers are smokers.

D. ✓ All smokers drink alcohol.

Answer: D

Since all smokers chew chat and all chat chewers drink alcohol, by the transitive property of subsets, all smokers must drink alcohol.

31. Find the two statements that together prove: Sara is a passionate science fiction writer. 1: A science fiction is written based on future expectations. 2: Sara writes science fictions. 3: Sara writes science fictions for living. 4: Sara loves science fictions. 5: Many people read science fictions written by Sara.

(1)

A. 1 & 3

B. 3 & 5

C. 4 & 5

D. ✓ 2 & 4

Answer: D

Statement 2 ('Sara writes science fictions') establishes she is a writer of this genre, and Statement 4 ('Sara loves science fictions') shows her passion for it. Together, they prove she is a passionate science fiction writer.

32. A soccer team played 160 games and won 65 percent of them. How many games did it win? (1)
- A. 94
B. ✓ 104
C. 114
D. 125

Answer: B

To find the number of wins, calculate 65% of 160: $0.65 \times 160 = 104$ games.

33. If 8% of a number is 150, then what is the number? (1)
- A. 1225
B. 1475
C. 1625
D. ✓ 1875

Answer: D

Let the number be x . Since $0.08 \times x = 150$, we solve for x by dividing 150 by 0.08, which yields 1875.

34. A man bought a used car for Birr 600,000 and paid 20% deposit. How much did he still have to pay? (1)
- A. Birr 380,000
B. Birr 420,000
C. ✓ Birr 480,000
D. Birr 500,000

Answer: C

The man paid a 20% deposit, leaving 80% of the total cost remaining to be paid: $0.80 \times 600,000 = \text{Birr } 480,000$.

35. If $R = (S + T)P / 3$, then T equals (1)
- A. ✓ $3R/P - S$
B. $(3R - S)/P$
C. $3R/P + S$
D. $(3R + S)/P$

Answer: A

Multiplying both sides of $R = (S + T)P / 3$ by 3 gives $3R = (S + T)P$. Dividing by P gives $3R/P = S + T$, and subtracting S yields $T = 3R/P - S$.

36. If $a - b = 3$ and $a^2 + b^2 = 29$, then what is the value of ab ? (1)
- A. 18
B. 15
C. 12
D. ✓ 10

Answer: D

Using the algebraic identity $(a - b)^2 = a^2 + b^2 - 2ab$, we substitute the given values: $3^2 = 29 - 2ab$, which simplifies to $9 = 29 - 2ab$. Thus, $2ab = 20$, leading to $ab = 10$.

37. What is the solution set of $[5(9 - x)/3] + 1 < 6$? (1)
- A. $\{x: x < 6\}$
B. $\{x: x \leq -6\}$
C. ✓ $\{x: x > 6\}$
D. $\{x: x > -6\}$

Answer: C

Subtracting 1 from both sides gives $[5(9 - x)/3] < 5$. Dividing by 5 yields $(9 - x)/3 < 1$, which simplifies to $9 - x < 3$, and hence $x > 6$.

38. If $2x^{-0.25} = 8$, then what is the value of x ? (1)
- A. ✓ $1/256$
B. $1/32$
C. $1/64$
D. $1/16$

Answer: A

Dividing both sides by 2 gives $x^{-0.25} = 4$, or $x^{-1/4} = 4$. Raising both sides to the power of -4 gives $x = 4^{-4} = 1/256$.

39. What least number must be added to 1056, so that the sum is completely divided by 23? (1)
- A. 5
B. 4
C. 3
D. ✓ 2

Answer: D

Dividing 1056 by 23 gives a quotient of 45 with a remainder of 21. To reach the next multiple of 23 (which is 1058), we must add $23 - 21 = 2$.

40. The ratio of the perimeter to the width of a rectangle is 5:1. If the area of the rectangle is 216 cm^2 , what is the length of the rectangle? (1)
- A. ✓ 18 cm B. 16 cm
- C. 14 cm D. 12 cm

Answer: A

The perimeter ratio $P/W = 5/1$ implies $2(L + W)/W = 5$, which simplifies to $2L = 3W$, or $W = (2/3)L$. Substituting this into the area formula $L * W = 216$ gives $(2/3)L^2 = 216$, which solves to $L = 18$ cm.

41. A family has two grandparents, two parents and three grandchildren. Average ages: grandparents 65, parents 35, grandchildren 6. What is the average age of the family?
- A. $28 \frac{4}{7}$ years
- B. ✓ **$31 \frac{1}{7}$ years**
- C. $32 \frac{1}{7}$ years
- D. $32 \frac{4}{7}$ years

Answer: B

The total sum of ages is $(2 * 65) + (2 * 35) + (3 * 6) = 130 + 70 + 18 = 218$. Dividing this by the total family size of 7 gives an average age of $218/7 = 31 \frac{1}{7}$ years.

- 42.** The price of 10 chairs is equal to that of 4 tables. The price of 15 chairs and 2 tables together is Birr 400,000. What is the total price of 12 chairs and 3 tables?
- A. ✓ **390,000**
- B. 388,000
- C. 384,000
- D. 375,000

Answer: A

From $10C = 4T$, we get $T = 2.5C$. Substituting this into $15C + 2T = 400,000$ gives $15C + 5C = 400,000$, so $C = 20,000$ and $T = 50,000$. Therefore, $12C + 3T = 12(20,000) + 3(50,000) = 390,000$.

- 43.** If $3^{x-y} = \frac{1}{3}$ and $3^{x+y} = 243$, then y is equal to:
- A. 1
B. ✓ 3
C. 4
D. 5

Answer: B

The equations can be rewritten as $x - y = -1$ and $x + y = 5$. Subtracting the first equation from the second yields $2y = 6$, which gives $y = 3$.

- 44.** The value of $(0.96^3 - 0.1^3) / (0.96^2 + 0.96 \times 0.1 + 0.1^2)$ is equal to:
- A. 1.06 B. 0.97
C. 0.95 D. ✓ **0.86**

Answer: D

Using the algebraic identity $(a^3 - b^3) / (a^2 + ab + b^2) = a - b$, we substitute $a = 0.96$ and $b = 0.1$ to obtain $0.96 - 0.1 = 0.86$.

- 51.** What is the sum of the infinite series $3 + 1/2 + 1/6 + 1/18 + 1/54 + \dots$? (1)
- A. $11/4$ B. $13/3$
- C. ✓ **$15/4$** D. $10/3$

Answer: C

Starting from the second term, the series is an infinite geometric series with first term $a = 1/2$ and common ratio $r = 1/3$. Its sum is $S = a/(1 - r) = (1/2)/(2/3) = 3/4$, which when added to the first term 3 gives $3 + 3/4 = 15/4$.

- 52.** The table gives number of different types of batteries sold (in thousands) from 1992 to 1998. (See table: 1992: 55AH=108; 1998: 55AH=145).
- What was the approximate percentage increase in the sale of type 55AH batteries in 1998 compared to that in 1992?
- A. 32% B. ✓ 34%
- C. 35% D. 36%

Answer: B

The percentage increase is calculated as the difference in sales divided by the initial sales value: $\frac{145-108}{108} \times 100\% = \frac{37}{108} \times 100\% \approx 34.3\%$, which rounds to 34%.

— END OF MARKING KEY —