

Scholastic Aptitude Test, 2014 EC, social science, entrance exam, round 1

Grade 12 · Aptitude · 2014 E.C.

MARKING KEY: CONFIDENTIAL

Time allowed: 120 minutes

Questions: 40

Total marks: 40

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1. The weather outside was extremely pleasant and hence we decided to _____ (1)

- A. employ this rare opportunity for writing letters
- B. ✓ **enjoy a morning ride in the open**
- C. refrain from going out for a morning walk
- D. utilize our time watching the television

Answer: B

Pleasant weather outside naturally motivates outdoor activities like a morning ride in the open, rather than staying indoors or avoiding walks.

2. She never visits any zoo because she is a strong opponent of the idea of _____ (1)

- A. going out of the house on a holiday
- B. feeding the animals while others are watching
- C. ✓ **holding the animal in captivity for our joy**
- D. setting the animal free into the forest

Answer: C

A zoo is a place where animals are kept in cages or enclosures, so someone who strongly opposes holding animals in captivity for entertainment would avoid visiting zoos.

3. I felt somewhat more relaxed _____ (1)

- A. ✓ **and tension free as compared to earlier**
- B. as there was already no tension at all
- C. and tense as compared to earlier
- D. but tense as compared to earlier

Answer: A

Feeling 'relaxed' is synonymous with being 'tension-free', making option A the only logically consistent completion compared to options containing 'tense'.

4. Practically, very little work could be completed in the last week as it was _____ (1)

- A. a very hectic week
- B. a very busy week
- C. full of working days
- D. ✓ **full of holidays**

Answer: D

If a week is full of holidays, official and professional operations are closed, which logically explains why practically very little work could be completed.

5. Despite all the efforts made to stop the war, _____. (1)
- A. the two groups expressed interest for peace
 - B. ✓ **the two groups seem determined to continue fighting**
 - C. the two groups do not seem to continue fighting
 - D. the two groups agreed to negotiate

Answer: B

The conjunction 'Despite' indicates a contrast; thus, notwithstanding the efforts to stop the war, the fighting continues because the groups remain determined to fight.

6. MARATHON is to RACE as HIBERNATION is to (1)
- A. Bear
 - B. ✓ **Sleep**
 - C. Dream
 - D. Winter

Answer: B

A marathon is a prolonged, intensive race, just as hibernation is a prolonged, deep state of sleep.

7. CUP is to COFFEE as BOWEL is to (1)
- A. Food
 - B. Spoon
 - C. ✓ **Soup**
 - D. Dish

Answer: C

A cup is a container used for drinking coffee, and a bowl (misspelled as 'bowel' in the prompt) is a container used for eating soup.

8. EMBARRASSED is to HUMILIATED as FRIGHTENED is to (1)
- A. Reckless
 - B. Courageous
 - C. Agitated
 - D. ✓ **Terrified**

Answer: D

Humiliated is an extreme degree of being embarrassed, just as terrified is an extreme degree of being frightened.

9. OPTIMIST is to CHEERFUL as PESSIMIST is to (1)
- A. Helpful
 - B. Mean
 - C. ✓ **Gloomy**
 - D. Petty

Answer: C

An optimist is characterized by being cheerful, whereas a pessimist is characterized by being gloomy.

10. COBBLER is to SHOE as CONTRACTOR is to (1)
- A. ✓ **Building**
 - B. Boot
 - C. Stone
 - D. Horse

Answer: A

A cobbler is a professional who makes or repairs shoes, and a contractor is a professional who builds or repairs buildings.

11. The spies conducted a covert operation, without being noticed by anyone. (1)
- A. illegal
 - B. ✓ **hidden**
 - C. foreign
 - D. dangerous

Answer: B

The word 'covert' means secret or not openly acknowledged, which corresponds directly to 'hidden' in this context.

12. The designer window treatment in her house, installed 17 years ago, were (1)
- A. ✓ **outmoded** B. outlawed
C. unimportant D. unnecessary

Answer: A

An item installed 17 years ago is likely to be old-fashioned or no longer in style, which is defined as 'outmoded'.

13. She showed a blatant disregard for the rules. (1)
- A. rebellious B. respectful
C. hidden D. ✓ **obvious**

Answer: D

A 'blatant' disregard refers to actions that are completely obvious, conspicuous, or flagrant, showing no attempt at concealment.

14. The interior of the hotel is so repulsive that everybody returns as soon as they enter it. (1)
- A. attractive B. bright
C. ✓ **Repugnant** D. Ugly

Answer: C

Something 'repulsive' causes intense distaste or disgust, which is synonymous with 'repugnant'.

15. Yonas has a paper route. Each morning, he delivers 37 newspapers to customers in his neighborhood. It takes Yonas 50 minutes to deliver all the papers. If Yonas is sick or has other problems, who lives in the same street, will sometimes deliver the papers for him. (1)
- A. Kadir would like to have his own paper route
B. It is dark outside when Yonas begins his deliveries
C. It takes Kadir more than 50 minutes to deliver the papers
D. ✓ **Yonas and Kadir live in the same neighbourhood**

Answer: D

Since the text states that Kadir 'lives in the same street' as Yonas, it can be logically inferred that they live in the same neighborhood.

16. Derartu is twelve years old. For three years, she has been asking her parents for a dog. Her parents have told her that they believe a dog would be happy in an apartment, but they have given her permission to have a bird. Derartu has not yet decided what kind of bird she would like to have. (1)
- A. Derartu and her parents would like to move
B. ✓ **Derartu and her parents live in an apartment**
C. Derartu does not like birds
D. Derartu's parents like birds better than they like dogs

Answer: B

Derartu's parents mention that they believe a dog would (not) be happy in an apartment, which directly implies that the family currently lives in an apartment.

17. Frehiwot likes to let her students choose who their partners will be; however, no pair of students may work together more than seven class periods in a row. Adem and Belay have studied together seven class periods in a row. Kiya and Aficho have worked together three class periods in a row. Kiya does not want to work with Adem. Who should be assigned to work with Belay? (1)
- A. Frehiwot
B. Aficho
C. Adem
D. ✓ **Kiya**

Answer: D

Adem and Belay cannot work together again because they have reached the limit of seven consecutive periods. Since Kiya refuses to work with Adem, Adem must work with Aficho, which leaves Kiya to be assigned to work with Belay.

18. The High School English Department needs to appoint a new chairperson, which will be based on seniority. Hawi has less seniority than Temam, but more than Bekelech. Redwan has more seniority than Hawi, but less seniority than Temam. Who should be the new English department chairperson? (1)
- A. Bekelech
B. Redwan
C. ✓ **Temam**
D. Hawi

Answer: C

Based on the seniority relationships, Temam has more seniority than Redwan, who has more than Hawi, who has more than Bekelech (Temam > Redwan > Hawi > Bekelech). Thus, Temam has the highest seniority and should be the new chairperson.

19. Nurse Nefisa has worked more night shifts in a row than Nurse Libamo, who has worked five. Nurse Loma has worked fifteen night shifts in a row, more than Nurses 33 Nefisa and Libamo combined. Nurse Gergalo has worked eight-night shifts in a row, less than Nurse Nefisa. How many night shifts in a row has Nurse Nefisa worked? (1)
- A. eleven
B. ten
C. ✓ **nine**
D. eight

Answer: C

Nefisa has worked more than Libamo (5 shifts) but less than 10 shifts because Loma (15 shifts) worked more than Nefisa and Libamo combined ($Nefisa + 5 < 15$). Since Nefisa has worked more than Gergalo (8 shifts), she must have worked 9 shifts.

20. Critical reading is a demanding process. To read critically, you must slow down your reading and, with a pencil in hand, perform specific operations on the text. Mark up the text with your reactions, conclusions, and questions. When you read, become an active participant. (1)
- A. Readers should get in the habit of questioning the truth of what they read
B. Critical reading is a slow, dull, but essential process
C. ✓ **Critical reading requires thoughtful and careful attention**
D. The best critical reading happens at critical times in a person's life

Answer: C

The passage describes critical reading as a demanding, active process requiring slowing down and actively marking the text, which is best summarized as requiring thoughtful and careful attention.

21. Exams are to be conducted on four days from Monday till Thursday. The exams to be conducted are English, Mathematics, Physics and Biology. Neither English Physics to be conducted on Thursday. Neither Physics nor Mathematics is to be conducted on Tuesday. There are three exams conducted after Biology. Physics exam is conducted on (1)
- A. Tuesday
B. Thursday
C. ✓ **Wednesday**
D. Monday

Answer: C

Since there are three exams after Biology, Biology is on Monday. Physics cannot be on Thursday or Tuesday, so it must be conducted on Wednesday.

22. The guest made derogatory remarks about the food he was served and by doing so he proved to be ungrateful and disrespectful. (1)
- A. cheerful
B. ✓ **complimentary**
C. unnecessary
D. interesting

Answer: B

The sentence indicates that the guest's remarks were disrespectful and ungrateful, meaning 'derogatory' is used. The opposite of a derogatory remark is a complimentary one.

23. All of his brothers like milk but he has a strong aversion for it. (1)
- A. hate
B. care
C. ✓ **love**
D. dear

Answer: C

The conjunction 'but' sets up a contrast with his brothers liking milk, meaning 'aversion' refers to a strong dislike. The antonym of aversion is love.

24. The inhabitants of the island were barbarians who have never lived in the modern world. (1)
- A. hate
B. bad
C. cruel
D. ✓ **civilized**

Answer: D

'Barbarians' refers to uncivilized people who do not live in the modern world. The exact opposite of this term in this context is 'civilized'.

25. Which of the following linear inequalities define the domain of the expression $\sqrt{2x - y - 4} + \ln(2x + y - 2)$? (1)
- A. $\{y < 2x - 4, y \geq -2x + 2\}$
B. ✓ **$\{y \leq 2x - 4, y > -2x + 2\}$**
C. $\{y < 2x - 4, y \leq -2x + 2\}$
D. $\{y \leq 2x - 4, y \geq -2x + 2\}$

Answer: B

For the radical expression to be defined, the radicand must be non-negative: $2x - y - 4 \geq 0 \implies y \leq 2x - 4$. For the logarithm to be defined, the argument must be strictly positive: $2x + y - 2 > 0 \implies y > -2x + 2$. Combining these gives the system in option B.

26. At present Meron is three years younger than her brother Tamrat. If Tamrat is n years old now, what will be the sum of their ages three years from now? (1)
- A. $2n$
B. $2n-3$
C. ✓ **$2n+3$**
D. $3n+1$

Answer: C

If Tamrat is n years old, Meron is $n - 3$ years old. In three years, their ages will be $n + 3$ and n , making the sum of their ages $(n + 3) + n = 2n + 3$.

- 27.** A large square pizza has 49 pieces (square pieces). Ali, Alemu and Abebe ate all the pieces in the ratio 4:2:1, respectively. How many pieces did Alemu eat?
- A. ✓ **14 pieces**
- B. 12 pieces
- C. 18 pieces
- D. 10 Pieces

Answer: A

The total ratio parts are $4 + 2 + 1 = 7$. Alemu ate $\frac{2}{7}$ of the 49 pieces, which is equal to 14 pieces.

- 28.** By selling a book for 258 birr a publisher gains 20% profit. For how much should he sell it to gain 30% profit? (1)
- A. 379.5 birr B. 269.5 birr
- C. 369.8 birr D. ✓ **279.5 birr**

Answer: D

A selling price of 258 birr with 20% profit gives a cost price of $258/1.2 = 215$ birr. To gain a 30% profit, the publisher must sell it for $215 \times 1.3 = 279.5$ birr.

29. The Pythagorean theorem for a right angled triangle is $a^2 + b^2 = c^2$, where a and b are legs of the triangle and c is the hypotenuse. If the shorter leg is 10 cm less than the other leg and the hypotenuse is 10 cm longer than the other leg, what is the length of the hypotenuse?
- A. 60 cm
B. ✓ 50 cm
C. 40 cm
D. 30 cm

Answer: B

Letting the other leg be x , we have $(x - 10)^2 + x^2 = (x + 10)^2$, which simplifies to $x = 40$. The hypotenuse is $x + 10 = 50$ cm.

- 30.** Abebe is scheduled to get a raise of birr 250 every 6 months during his first years on the job. If his starting salary is birr 25,250 per year, what is his annual salary at the end of 3 years? (1)
- A. ✓ **Birr 26,750**
- B. Birr 27,000
- C. Birr 26,500
- D. Birr 27,250

Answer: A

Over 3 years, there are 6 raises of 250 birr each. Therefore, his annual salary rate at the end of 3 years will be $25,250 + (6 \times 250) = 26,750$ birr.

- 31.** A certain car loses one-tenth of its value each year. If the car is worth Birr 28,000 today, how much will it worth 4 years from now? (1)
- A. Birr 25,200 B. Birr 22,689
- C. ✓ **Birr 18,370.80** D. Birr 9,629.20

Answer: C

Each year the car retains $9/10$ of its value. After 4 years, its value will be $28,000 \times (0.9)^4 = 28,000 \times 0.6561 = 18,370.80$ birr.

- 32.** A theater has 38 rows of seats. The first row has 17 seats, the second row has 20 seats, the third row has 23 seats, and so on. What is the seat capacity of the theater?
- A. 2765
B. ✓ **2755**
C. 2627
D. 2565

Answer: B

Using the arithmetic series sum formula $S_n = \frac{n}{2}[2a_1 + (n - 1)d]$ with $n = 38$, $a_1 = 17$, and $d = 3$, we get $S_{38} = 19 \times [34 + 37 \times 3] = 19 \times 145 = 2755$ seats.

33. Suppose a ball is dropped from a height of 15m and that it always rebounds to a height equal to two-third of the distance from which it falls. If we let the ball bounce "forever", what is the total distance it would travel until it comes to rest? (1)
- A. 65m
B. 60m
C. 45m
D. ✓ 75m

Answer: D

The total distance is a geometric series: $15 + 2 \times 15 \times (2/3) + 2 \times 15 \times (2/3)^2 + \dots = 15 + 2 \times 15 \times \frac{2/3}{1-2/3} = 15 + 60 = 75$ meters.

34. A manufacturer produces two types of telephones. The more expensive model requires 1 hour to manufacture and 30 minutes to assemble. The less expensive model requires 45 minutes to manufacture and 15 minutes to assemble. If the company allocates 150 hours for manufacturing and 60 hours for assembly, how many of each type can be produced? (1)
- A. 60 of the more expensive model, 90 of the less expensive model
B. ✓ 60 of the more expensive model, 120 of the less expensive model
C. 15 of the more expensive model, 120 of the less expensive model
D. 15 of the more expensive model, 90 of the less expensive model

Answer: B

Solving the system of equations for manufacturing ($x + 0.75y = 150$) and assembly ($0.5x + 0.25y = 60$) yields $x = 60$ and $y = 120$.

35. Two dice are rolled and the numbers on top are added. What is the probability that the sum is less than 4? (1)
- A. 5/6
B. ✓ 1/12
C. 5/36
D. 1/6

Answer: B

The only outcomes when rolling two dice that result in a sum less than 4 are (1,1), (1,2), and (2,1). Since there are 3 successful outcomes out of 36 total possibilities, the probability is $3/36 = 1/12$.

36. The table below indicates the school population by gender. Males Females Total Freshman 8 17 25 Sophomore 15 10 25 Junior 12 13 25 Senior 15 10 25 Total 50 50 100 Out of the 100 students, what is the probability of randomly selecting a student is either a female or a senior? (1)
- A. 35/100
B. 50/100
C. 10/100
D. ✓ 65/100

Answer: D

The probability of selecting a female or a senior is given by $P(\text{Female}) + P(\text{Senior}) - P(\text{Female and Senior}) = 50/100 + 25/100 - 10/100 = 65/100$.

37. Last year a phone model had a battery that lasted 12 hours. This year the battery lasts only for 8.16 hours. What percent of the battery life has decreased? (1)
- A. ✓ 32
B. 47
C. 54
D. 68

Answer: A

The decrease in battery life is $12 - 8.16 = 3.84$ hours. Expressed as a percentage of the original battery life, this is $(3.84 / 12) * 100\% = 32\%$.

38. A library normally collects 47 birr in fees in a month. But in March they collected 59.22 birr. What is the percent increase in fees collected in March? (1)
- A. 79
B. 62
C. ✓ 26
D. 20.6

Answer: C

The increase in fees collected is $59.22 - 47 = 12.22$ birr. The percent increase is $(12.22 / 47) * 100\% = 26\%$.

39. If $f(x) = x^2 - 5x + 1$, then $f(x+2)$ is equal to: (1)
- A. $x^2 - 3x + 1$
B. $x^2 - x - 6$
C. Not given
D. ✓ $x^2 - x - 5$

Answer: D

To find $f(x+2)$, substitute $(x+2)$ into the function: $f(x+2) = (x+2)^2 - 5(x+2) + 1 = x^2 + 4x + 4 - 5x - 10 + 1 = x^2 - x - 5$.

40. Consider the following table: Quantity A Quantity B $2^2 + 2^3 + 2^6 + 2^8$ 8^2 How are the two quantities related? (1)
- A. Quantity B is greater than quantity A.
B. ✓ Quantity A is greater than quantity B.
C. The relationship cannot be determined.
D. The two quantities are equal.

Answer: B

Quantity A is $2^2 + 2^3 + 2^6 + 2^8 = 4 + 8 + 64 + 256 = 332$, while Quantity B is $8^2 = 64$. Thus, Quantity A is greater than Quantity B.

END OF THE MARKING KEY

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