



Graduate Admission Test (GAT)

Model exams



Set by:

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Introduction

The Graduate Admission Test (GAT) is a general aptitude test designed to assess verbal, quantitative, and analytical reasoning abilities as predictors of success in graduate studies. GAT results help to screen and identify candidate that are eligible to apply for admission to a graduate program in any public and private university in the country. The test is divided into three sections, each targeting a specific aspect of reasoning. The first section is dedicated to verbal reasoning. It assesses candidates' ability to understand and analyze written passages, comprehend complex ideas, draw inferences, and evaluate arguments. The second section focuses on quantitative reasoning, which measures the test takers' proficiency in understanding and interpreting numerical data, solving mathematical problems, and applying quantitative concepts. The third section focuses on analytical reasoning. It gauges the candidates' capacity to analyze and evaluate logical relationships, recognize patterns, and draw conclusions based on given information.

Administration of GAT

The administration of the GAT is a collaborative effort between the Ministry of Education (MoE), the Addis Ababa University (AAU), the Institute of Educational Research (IER) - Testing Center, Ethio-telecom, and public universities. The test is conducted digitally through AAU's testing portal at gat.aau.edu.et, utilizing the private network infrastructure of MoE. The digital format of the GAT offers several advantages, including enhanced efficiency, streamlined test administration, and automated scoring processes. Test takers are required to take the test in designated computer labs at public universities, ensuring standardized conditions for all participants.

About the Exam

- ✓ The Graduate Admission Test (GAT) is composed of three sections: Verbal Reasoning, (60 questions), Quantitative Reasoning (40 questions) and Analytical Reasoning (25 questions). Each of these tests lasts for one hour and you will need to stay working on

the actual exams for three hours. Students with Visual impairment will work only the Verbal Reasoning Section. Before starting your actual exam you are required to fill out a brief survey questionnaire. The system will not let you take the exam unless you complete the survey.

- ✓ While working on the Verbal Reasoning sub-test you can move forward or backwards to correct your earlier responses. Once the 60 minutes is finished you will have no access to the Verbal Reasoning Section. Rather the system will automatically redirect you to the second sub-test on Quantitative Reasoning and you will work for 60 minutes where your time will count down and deny you access to this section by the end of the hour. The same principle applies to the third section on Analytical Reasoning for one hour. At the end of the three hours test you will be immediately notified about your raw scores. You need to wait for more than two weeks until all test takers complete the GAT to get the cut-off score for passing the GAT test. Cut off score for passing the GAT will be notified by the AAU web-site.
- ✓ Note: the score on GAT is not the only requirement for admission into the graduate program. The minimum required score on GAT is a prerequisite for department level examination. Hence, after getting the pass score on the GAT each candidate shall sit for department level testing.

Responsibilities of GAT Test Takers

- ✓ Please identify your respective testing site ahead of time, preferably one day before the test date.
- ✓ You can bring your own calculator to the exam hall to do the Quantitative Section. However, you are not allowed to bring any calculator that has facilities of copying or sending /receiving information.
- ✓ You will be given scratch papers for the quantitative and Analytical Sections where you are required to write your full name and registration number on the top of each page of the scratch papers. Before leaving the exam hall each candidate is expected to submit all

scratch papers to the invigilators. No test taker is allowed to take the scratch papers with them. Defiance to all instructions associated with the GAT administration shall have serious consequences when and if reported by the test supervisor/s.

- ✓ You are required to produce valid identification document (e.g. passport, Kebele/Woreda ID card, driving license, employee ID card). **No candidate shall be admitted to a testing hall unless he/she produces valid identification document, GAT-admission ticket and Bank receipt showing the payment of 1000 birr to take the GAT.** Covering the face is not allowed except using face masks. The test taker should uncover his/her face mask or other covering material during checking by the test supervisor.
- ✓ You are required to show your ID card to the gate keeping security staff at your respective testing site. Please don't leave your identification document at the gate as you need it for admission to the testing hall.
- ✓ Please print out your Admission Ticket and keep it with you during testing. Invigilators will check your Admission Ticket with your identification card and your personal details on the computer screen during testing. Please place them on your desk ready for this validation process.
- ✓ Keep note of your password as it is essential for logging in. Never share your password to any other person.
- ✓ Candidates scheduled for morning session testing, are required to arrive at their respective testing site at 8:00 am/2 hours in the morning in local time/ whereas candidates scheduled for the afternoon session testing are required to arrive at their respective testing site at 1:00 pm/7 hours in the afternoon in local time/. Test takers who are late by 30 minutes will not be allowed to enter to the testing hall.
- ✓ After passing the check point at the gate of the test site, you need to proceed to the testing hall immediately.
- ✓ It is important that you should follow instructions given by the supervisor and invigilators of your test center.

- ✓ Any attempt of cheating on the exam, sharing answers with other, or copying the test materials using any form shall have serious legal consequences.

Materials prohibited in the testing hall

- ✓ Any electronic device including mobile phone, smart watches, camera, or other electric devices are strictly prohibited in the exam hall. If such materials are brought to the testing hall, they need to be kept in personal bags at locations designated by the supervisor/invigilators. It is strictly forbidden to keep such materials in pocket or on the desk.
- ✓ You need to bring a bag or a name identifier plaster to tag your name with your phone or other materials.
- ✓ Books, handouts, pamphlets, scratch papers or any material in hard or soft copies are prohibited
- ✓ Food and drinks are not allowed in the testing hall.

NOTE:-

In this model exam paper, there are 60 verbal, 40 quantitative and 25 logical/analytical reasoning sample/model exam questions with answer. These model exams will test you on the knowledge areas of English, Math, and Logic. Some of these sample exam questions may appear on the GAT. The last page on each section contains the Answer Key. I encourage you to first respond to the questions, and then refer to the Answer Key to check your answers.

Contents of the GAT

A. Verbal reasoning section

The verbal reasoning contains mainly the following types of questions:

- ✚ Reading comprehension
- ✚ Sentence completion
- ✚ Vocabulary
- ✚ Sentence equivalence

- ✚ Grammar

B. Quantitative reasoning section

Quantitative reasoning contains the basic mathematical facts and concepts. It tests your ability and being able to apply these mathematical facts to real world scenarios. It contains:

- ✚ Percentage, ratio, age problems, ...
- ✚ Squares, square roots, exponential laws, logarithm, ...
- ✚ Word problems that involves equations with one or two variables
- ✚ Linear equations in one and two variables, inequalities, ...
- ✚ Perimeter, area, volume, polygons, ...
- ✚ Mean, median, variance, ...

C. Logical reasoning section

Logical/ analytical reasoning questions include:

- ✚ Syllogism(Valid deductive argument)
- ✚ Small paragraph understanding
- ✚ Interpretation of graphs, histogram, line chart, pie-chart, ...

Good luck

PART -I-
Verbal Reasoning Section

SENTENCE COMPLETION:

Instructions (1-9): In this part of test, you have 9 MCQs about English. Each sentence below has one or two blanks, each blank shows that something has been omitted. Choose the correct answer from the four answer choices given with each question, numbered (A), (B), (C), (D).

1. **Viruses are invisible through the ___ microscope; but we know that they are there because we can see the . they cause.**
(A) Cheap; Damage (B) Elementary; Harm
(C) Simple; Danger (D) Ordinary; Havoc
2. **The sea was coming after me as high as a great hill and _ as a _____ enemy.**
(A) Furious; Charging (B) Dreadful; Advancing
(C) Terrible; Charging (D) Angry; Attacking
3. **Although its publicity has been _____, the film itself is intelligent, well-acted, handsomely produced and altogether ____.**
(A) Tasteless; Respectable (B) Extensive; Moderate
(C) Sophisticated; Moderate (D) Risqué; Crude
4. **It takes _ character to _____ the extremities of the arctic region.**
(A) An unflappable; Sustain (B) A dictatorial; Brook
(C) A Spartan; Negotiate (D) An inimitable; Resist
5. **As a journalist who works to overturn erroneous convictions, Griffin Nicholson was opposed to the court ruling _____ appeals for inmates who might be _____.**
(A) Barring; Culpable (B) Curbing; Exonerated
(C) Encouraging; Innocent (D) Scrutinizing; Eligible
6. **Their conversation was unsettling, for the gravity of their topic contrasted so oddly with the _____ of their tone.**
(A) Uniqueness (B) Rapidity
(C) Lightness (D) Precision
7. **The driver suddenly applied the brakes when he saw a _ truck ahead of him.**
(A) Stationary (B) Moving
(C) Static (D) Immobile
8. **Salma is much too _ to have anything to do with that obnoxious affair.**
(A) Noble (B) Proud
(C) Happy (D) Difficult
9. **Roberto Clement was seen as _____ during his life because of both his selflessness on the baseball field and his humanitarian work in his native Nicaragua.**
(A) An individualist (B) A grandstander
(C) A sybarite (D) An altruist

ANTONYMS:

Directions: In each of the following antonym questions, a word printed in capital letters precedes four or five lettered words or phrases. From these five lettered words or phrases, pick the one most nearly opposite in meaning to the capitalized word.

10. **ABBREVIATE :**
(A) abridge (B) expand
(C) achieve (D) Accept
11. **ABJURE :**
(A) Acknowledge (B) disown
(C) Deny (D) hate
12. **ABSURD :**
(A) Scarcity (B) adorn
(C) Rational (D) flourish
13. **ABUNDANT :**
(A) ample (B) enough
(C) Great (D) scant
14. **ACERBITY :**
(A) Sweat (B) gentleness
(C) Tasty (D) account
15. **BLOOMING :**
(A) Fading (B) flowering
(C) Quiet (D) mild
16. **BLISS :**
(A) Merge (B) disseminate
(C) Dull (D) suffering
17. **BEWITCH :**
(A) Disenchant (B) rapture
(C) Profit (D) avail
18. **BAUBLE :**
(A) Plaything (B) valuable
(C) Modest (D) besiege

ANALOGIES:

Directions: Each of the following analogy questions presents a related pair of words linked by a colon. Four or Five lettered pairs of words follow the linked pair. Choose the lettered pair of words whose relationship is most like the relationship expressed in the original linked pair.

19. BOOK: READ

- (A) Ointment: Apply (B) Bat: Ball (C) Watch: Time (D) Marriage: Home

20. SUSPICION: FAITH

(A) Prisoner: Punishment (B) Court: Justice (C) Rule: Serve (D) Dawn: Morning

21. ENGINE: COMPARTMENT

(A) Gear: Car (B) Heart: Lungs (C) Needle: Thread (D) Pen: Write

22. EDUCATION: SCHOOL

(A) Medicine: Hospital (B) Production: Factory (C) Wood: Furniture (D) Milk: Cow

23. RENOVATION: RENEWAL

(A) Fail: Examination (B) Tumble: Topple (C) Poor: Poverty (D) Up: Climb

24. BUSH: FLORA

(A) Plant: Fauna (B) Horse: Carriage (C) Fish: Water (D) Blue: Color

25. HEAVY: LIGHT

(A) Loophole: Proof (B) Fool (C) Weight: Bulb (D) Dark: Night (E) Water: Fire

26. BOOK: PAGE

(A) Parliament: Minister (B) Rope: Fiber (C) Ship: Wood (D) Star: Space

27. EXAMINATION: DEGREE

(A) Doctor: Ph.D (B) Music: Instrument (C) Interview: Selection (D) Sports: Medal

READING COMPREHENSION:

Passage (Question 28-30): The purpose of education is to make the student an expert in his subject. This must be clearly understood, and mere muddling through lessons and lectures and books and passing examinations are relegated to secondary importance as means to end- which is excellence in the field chosen. But there are so many fields, and no man can become an expert in all the fields. It is necessary to decide which fields are the important ones that a man should know well. It is clear that one's own work is the most important. This has been realized and modern civilization has accordingly provided vocational education. It is now possible to acquire high professional skill in the various fields, medicine, engineering production, commerce and so on-but with good and bad mixed together, and no standard for guidance.

28. The purpose of education is to make the student:

- (A) An expert in all fields
- (B) An expert in his subject
- (C) Only capable of earning
- (D) Confident only

29. **What, according to the writer, is the end ?**

- (A) Excellence in the field chosen
- (B) Passing the examination
- (C) Earning more and more money
- (D) Cramming lectures and books

30. **The modern civilization has provided:**

- (A) Vocational education
- (B) Art of conversation
- (C) Adult education
- (D) Higher education

Passage (Question 31-32): According to Aristotle, the most important question in the physical world was the search for happiness. He was not an idealist preaching impossible ideals and counsels of perfection. His scientific training made him a realist who believed that happiness was the aim of life and every activity, even ethics, was subordinate to it. He tries to explore the nature of happiness and explains it by differentiating man from other animals in that he possesses the thinking faculty by which he masters the earth and surpasses all living beings and its development will give him fulfillment and happiness.

31. **In the given paragraph:**

- (A) Aristotle surpasses the earth and all living beings
- (B) Aristotle tries to explore the nature of physical world
- (C) Aristotle speaks about all living beings
- (D) Aristotle tries to explore the nature of happiness

32. **Man differs from other animals in having:**

- (A) A brain
- (B) Speaking faculty
- (C) Thinking faculty
- (D) Eating faculty

Passage (Question 33-37): A duty is an obligation. It is something we owe to others as social beings when we live together. We must let others live with us. My right of living implies my duty to my fellowmen to allow them the same conditions of life. Infact, rights and duties are co-related. What is a right in regard to one is a duty in regard to others. Rights and duties are two sides of the same coin. We should always observe from the stand point of others. Thus they are duties. Moral duty is more effective than the legal. A moral duty is that which is upon the people on moral grounds. It is my moral duty to help the poor because of being a member of the society. I must try to create these conditions which contribute to the welfare of humanity. Similarly, I owe a duty to my parents-to be obedient and respectful to them. This duty originates from the sense of responsibility which is directly related with our conscience. So this maxim is concerned with a moral duty which a man should owe without the legal bondage. Sense of duty is paramount for the proper development of civilization in the 20th century. Hypocrisy and diplomacy are quite reverse to the sense of duty. Hypocrisy involves wickedness duty involves sincerity and faithfulness.

33. **Rights and duties according to the passage are:**
- (A) Co-related
 - (B) Two sides of the same coin
 - (C) Neither of the above
 - (D) Both (A) and (B)
34. **According to the author, the moral duty is:**
- (A) Enjoined upon animals
 - (B) Helping the rich
 - (C) More effective than the legal duty
 - (D) Secondary to the legal duty
35. **Where does the duty originate from?**
- (A) From responsibility but not from conscience
 - (B) From responsibility which is related with conscience
 - (C) From legal bondage
 - (D) From hypocrisy and diplomacy
36. **Point out the incorrect statement.**
- (A) Hypocrisy and diplomacy do not support the sense of duty
 - (B) Hypocrisy involves wickedness
 - (C) Duty involves sincerity
 - (D) Sense of duty is not important for the development of civilization
37. **The author:**
- (A) Has sense of responsibility
 - (B) Doesn't have sense of duty
 - (C) Both (A) and (B)
 - (D) Neither (A) nor (B)

Passage (Question 38-40): When we are suddenly confronted with any terrible danger, the change of nature we undergo is equally great. In some cases, fear paralyses us. Like animals, we stand still, powerless to move a step in fright or to lift a hand in defence of our lives, and sometimes we are seized with panic, and again, act more like the inferior animals than rational beings. On the other hand, frequently in cases of sudden extreme peril, which cannot be escaped by fright, and must be instantly faced, even the most timid men at once as if by miracle, become possessed of the necessary courage, sharp quick apprehension, and swift decision. This is a miracle very common in nature. Man and the inferior animals alike, when confronted with almost certain death 'gather resolution from despair' but there can really be no trace of so debilitating a feeling in the person fighting, or prepared to fight for dear life. At such times, the mind is clearer than it has ever been; the nerves are steel, there is nothing felt but a wonderful strength and daring. Looking back at certain perilous moments in my own life, I remember them with a kind of joy, not that there

was any joyful excitement then; but because they brought me a new experience, a new nature, as it were and lifted me for a time above myself.

38. **An appropriate title for the above passage would be:**
- (A) The change of nature
 - (B) Courage and panic
 - (C) The will to fight
 - (D) The miracle of confronting danger
39. **The author names three different ways in which a man may react to sudden danger. What are they?**
- (A) He may be paralyzed with fear, or seized with panic, or as if by miracle, become possessed of the necessary courage, and face the danger
 - (B) He may be paralyzed with fear, run away or fight
 - (C) He may flee in panic, or fight back or stand still
 - (D) He may be paralyzed with fear, seized with panic or act like an inferior animal
40. **The distinction between 'inferior animals' and 'rational beings' is that:**
- (A) The latter are stronger
 - (B) The latter are capable of reasoning things out whereas the former cannot do so
 - (C) The former are incapable of fighting
 - (D) The latter are clever
41. **Student A: I am having a lot of trouble with this assignment Student B: Please try and do it as _____ as you can.**
- (A) Well (B) good (C) possible (D) soon
42. **He should have taken more time _____ his essay.**
- (A) to edit (B) editing (C) for edits (D) to editing
43. **Student A: It's good news that Rashid passed his first-year exams, _____ Student B: Yes, let's hope he's _____ next year, too.**
- (A) isn't it?; succeeded
 - (B) doesn't he?; succeed
 - (C) weren't they?; succeeded
 - (D) isn't it?; successful

44. _____ sure you adhere to all the ethical procedures when carrying _____ your medical research project.

- (A) To make; off (B) Making; up (C) Make; out (D) To make; out

Please choose the word that is most similar to the underlined word in the sentence given.

45. "Have you altered the introduction to your essays?"

Which word is most like **altered**?

- (A) Forgotten (B) selected (C) composed (D) amended

46. "I assume that the tutors will be able to help me with any essay problems."

Which word is most like **assume**?

- (A) Suppose (B) know (C) doubt (D) deduce

The questions below test your knowledge of words that often occur together.

47. "The sound coming from the speakers was intense."

Which word is most often used with **intense**?

- (A) intense error (B) intense formula (C) intense funds (D) intense pain

48. "It was a great relief when we finished the task."

Which word is most often used with **relief**?

- (A) breath of relief (B) sigh of relief (C) gasp of relief (D) noise of relief

49. Is that _____ "8" or _____ "B"? I can't read it.

- (A) a; an (B) an; an (C) an; a (D) a; the

50. We huddled together for warmth the blankets.

- (A) Along (B) besides (C) into (D) beneath

51. There were very _____ people on the beach, so nobody saw the child drowning.

- (A) Much (B) a few (C) few (D) very little

52. I don't want my friends to have _____ to complain over this cake, so I will give it my best shot.

- (A) Much (B) some (C) many (D) little

53. *Would you like ____ bread?*

(A) a collection of (B) a bunch of (C) a loaf of (D) a can of
54. *There is ____ butter left. We need to buy more.*

(A) few, any (B) little, some (C) much, many (D) few, some
55. *Which of the following sentences is CORRECT?*

- (A) All that glitters is not gold.
- (B) All these glitters is not gold
- (C) All that glitters are not gold
- (D) All glittering is not gold

56. *She has been _____ to music all day.*

- (A) Listening (B) listened (C) listens (D) listen

57. *When I came to this city, I _____ anyone.*

(A) haven't known (B) didn't know (C) wasn't knowing (D) wouldn't knowing
58. *Which of the following sentences is CORRECT?*

- (A) One should keep oneself ready for emergency.
- (B) One should kept himself or herself ready for emergency
- (C) One should be keeping himself ready for emergency
- (D) One should keep himself to herself ready for emergency

59. *Did you just __me a liar?*

(A) Call (B) called (C) have called (D) calling
60. *Those newspapers in a big truck.*

- (A) are delivering
- (B) is deliver
- (C) are delivered
- (D) had delivered

Answers for verbal reasoning section

| | | | | | | | | | | | |
|----|---|----|---|----|---|----|---|----|---|----|---|
| 1 | D | 11 | A | 21 | C | 31 | D | 41 | A | 51 | C |
| 2 | A | 12 | C | 22 | B | 32 | C | 42 | A | 52 | A |
| 3 | A | 13 | D | 23 | B | 33 | D | 43 | D | 53 | C |
| 4 | C | 14 | B | 24 | D | 34 | C | 44 | C | 54 | B |
| 5 | C | 15 | A | 25 | A | 35 | B | 45 | D | 55 | A |
| 6 | C | 16 | D | 26 | B | 36 | D | 46 | A | 56 | A |
| 7 | A | 17 | A | 27 | C | 37 | A | 47 | D | 57 | B |
| 8 | A | 18 | B | 28 | B | 38 | D | 48 | B | 58 | A |
| 9 | B | 19 | A | 29 | A | 39 | A | 49 | C | 59 | A |
| 10 | B | 20 | C | 30 | A | 40 | B | 50 | D | 60 | C |

PART -II-
Quantitative Reasoning Section

1. What is the area of a circle whose radius is the diagonal of a square whose area is 9?

- (A) 8π (B) 18π
(C) 3π (D) 36π

2. The circumference of a circle is $x\pi$ units, and the area of the circle is $y\pi$ square units. If $x = y$, then radius of the circle is:

- (A) 1 (B) 2
(C) 3π (D) 2π

3. What is the volume of a cube whose surface area is 294?

- (A) 125 (B) 216
(C) 294 (D) 343

4. The ratio of boys to girls in a certain classroom was 2 : 3. If boys represented five more than one-third of the class, how many people were in the classroom?

- (A) 30 (B) 45
(C) 75 (D) 60

5. What is the average of 5^{30} , 5^{60} , 5^{17} , 5^{13} and 5^{90} ?

- (A) 5^{210} (B) 5^{209}
(C) $5^{29} + 5^{59} + 5^{16} + 5^{12} + 5^{89}$ (D) 5^{205}

6. If $p + 1 < 3p + 5$, then:

- (A) $p < -2$ (B) $p > -2$
(C) $p = 0$ (D) $p > 2$

7. If an equilateral triangle and a square have the same perimeter, what is the ratio of the lengths of the sides of the equilateral triangle to the lengths of the sides of the square?

- (A) 3 : 4 (B) 4 : 3
(C) 1 : 2 (D) 1 : 3

8. If $a + 2b = x$ and $a - 2b = y$, which of the following expression is equal to ab ?

- (A) $\frac{x^2 - y^2}{8}$ (B) $\frac{x^2 + y^2}{4}$ (C) $x^2 - y^2$ (D) $x^2 + y^2$

9. If the sum of the two integers is 42 and their difference is 22. Then the greater of the two integers is:

- (A) 25 (B) 32 (C) 8 (D) 10

10. If $a^2 = 17$, then $(a + 1)(a - 1) = ?$

- (A) 15 (B) 12 (C) 16 (D) 9

11. Abebe, Bletu and Omar combined their money to purchase a laptop. Together, they paid a total of \$490 for the laptop, including vat.

- Abebe paid \$50 more than Beletu paid.
- Beletu paid twice as much as Omar paid.

How much did Abebe pay?

- (A) \$108 (B) \$176 (C) \$226 (D) \$295

12. In an office with 30 trainees and a team lead, the average age of the whole team decreases by 1 year when team lead is excluded. If the average age of the whole team is 27 years, then what is the age of the team lead?

- (A) 54 years (B) 55 years (C) 56 years (D) 57 Years

13. 20 friends went to a movie theatre. The average cost of the movie ticket for 19 friends was \$120. But one of the friends paid \$38 more than the average cost for all the 20 friends. What was the total amount paid by all of them together?

- (A) \$ 2,438 (B) \$ 2,440 (C) \$ 2,204 (D) \$ 2,140

14. If A means 'Multiplication', B means 'Division', C means 'Addition' and D means 'Subtraction' then what is the value of $306 \text{ B } 34 \text{ A } 7 \text{ D } 7 \text{ C } 5$?

- (A) 32 (B) 61 (C) 54 (D) 43

15. What is the sum of all the factors of 28?

- (A) 56 (B) 55 (C) 28 (D) 68

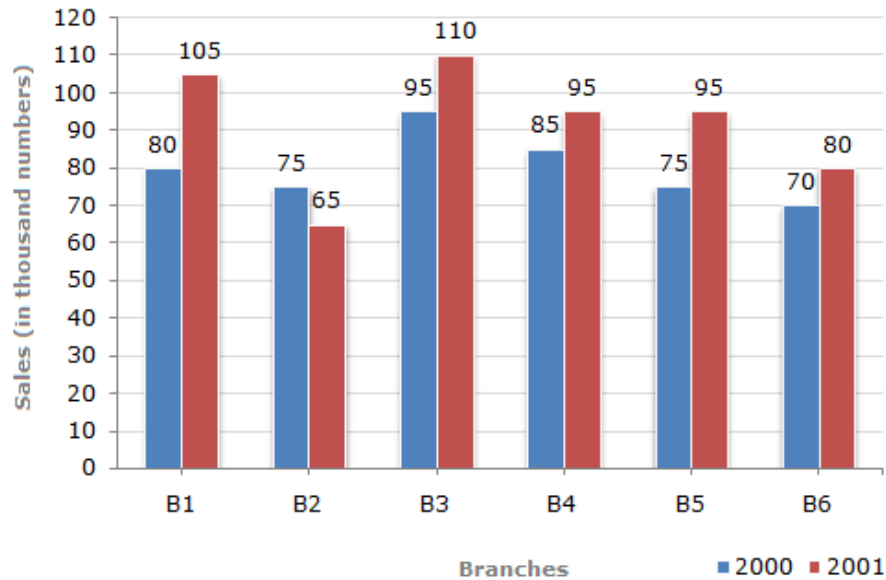
16. In an election between 2 contestants, 20% of the total votes were declared invalid and one of the contestants got 35% of the total valid votes. If the total number of votes in that election is 4,850 then what is the total number of valid votes that the other contestant got?

- (A) 2,502 (B) 2,512 (C) 2,522 (D) 2,436

17. The total share of A, B and C is 669 in such a way that the ratio of the shares of A to B is 17:27 and that of B to C is 2:5. What is the share of C?
(A) 135 (B) 270 (C) 223 (D) 405
18. Team members can complete a job in 20 days but with the help of their team leader, they can complete it in 15 days. In how many days can the team leader alone complete the job?
(A) 20 Days (B) 60 Days (C) 40 days (D) 80 Days
19. If B is $\frac{5}{2}$ times of A then A is what percentage of B?
(A) 40% (B) 20% (C) 60% (D) 50%
20. The sum of ages of 5 children born at the intervals of 3 years each is 50 years. What is the age of the youngest child?
(A) 16 (B) 12 (C) 4 (D) 7
21. If $\log 2 = 0.3010$ and $\log 3 = 0.4771$, the value of $\log_5 512$ is
(A) 2.87 (B) 2.967 (C) 3.876 (D) 3.912
22. There are two examinations rooms A and B. If 10 students are sent from A to B, then the number of students in each room is the same. If 20 candidates are sent from B to A, then the number of students in A is double the number of students in B. The number of students in room A is:
(A) 20 (B) 60 (C) 80 (D) 100
23. The price of 10 chairs is equal to that of 4 tables. The price of 15 chairs and 2 tables together is Birr 4000. The total price of 12 chairs and 3 tables is:
(A) 3500 (B) 3900 (C) 3750 (D) 3840

The bar graph given below shows the sales of books (in thousand numbers) from six branches of a publishing company during two consecutive years 2000 and 2001. Answer questions (24-28) based on the bar graph.

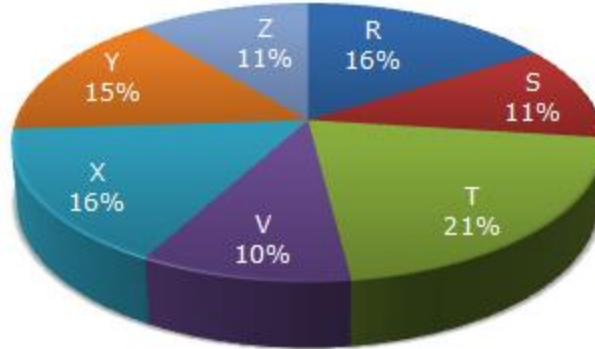
Sales of Books (in thousand numbers) from Six Branches - B1, B2, B3, B4, B5 and B6 of a publishing Company in 2000 and 2001.



24. What is the ratio of the total sales of branch B2 for both years to the total sales of branch B4 for both years?
 (A) 2:3 (B) 3:5 (C) 4:5 (D) 7:9
25. A total sale of branch B6 for both the years is what percent of the total sales of branches B3 for both the years?
 (A) 68.54% (B) 71.11% (C) 73.17% (D) 75.55%
26. What percent of the average sales of branches B1, B2 and B3 in 2001 is the average sales of branches B1, B3 and B6 in 2000?
 (A) 87.5% (B) 82.5% (C) 77.5% (D) 75%
27. What is the average sale of all the branches (in thousand numbers) for the year 2000?
 (A) 73 (B) 80 (C) 83 (D) 88
28. A total sale of branches B1, B3 and B5 together for both the years (in thousand numbers) is?
 (A) 250 (B) 310 (C) 435 (D) 560
29. The percentage increase in the area of a rectangle, if each of its sides is increased by 20% is:
 (A) 40% (B) 42% (C) 44% (D) 46%

Study the following pie-chart and the table and answer the questions (30-33) based on them.

Proportion of Population of Seven Villages in 1997



| Village | % Population Below Poverty Line |
|---------|---------------------------------|
| X | 38 |
| Y | 52 |
| Z | 42 |
| R | 51 |
| S | 49 |
| T | 46 |
| V | 58 |

30. If the population of village R in 1997 is 32000, then what will be the population of village Y below poverty line in that year?

- (A) 156000 (B) 16500 (C) 14100 (D) 17000

31. The ratio of population of village T below poverty line to that of village Z below poverty line in 1997 is:

- (A) 11:23 (B) 13:11 (C) 23:11 (D) 11:13

32. Find the population of village S if the population of village X below poverty line in 1997 is 12160.

- (A) 18500 (B) 22000 (C) 20500 (D) 26000

33. If in 1998, the population of villages Y and V increase by 10% each and the percentage of population below poverty line remains unchanged for all the

villages, then find the population of village V below poverty line in 1998, given that the population of village Y in 1997 was 30000.

- (A) 11250 (B) 12760 (C) 13140 (D) 13780

34. A train running at the speed of 60 km/hr crosses a pole in 9 seconds. What is the length of the train?

- (A) 180 m (B) 324m (C) 120m (D) 150m

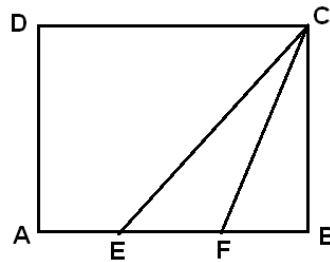
35. An accurate clock shows 8 o'clock in the morning. Through how many degrees will the hour hand rotate when the clock shows 2 o'clock in the afternoon?

- (A) 180° (B) 168° (C) 150° (D) 144°

36. A square, whose side is 2 m, has its corners cut away so as to form an octagon with all sides equal. Then the length of each side of the octagon, in meters, is

- (A) $\frac{\sqrt{2}}{\sqrt{2}+1}$ (B) $\frac{2}{\sqrt{2}+1}$ (C) $\frac{2}{\sqrt{2}-1}$ (D) $\frac{\sqrt{2}}{\sqrt{2}-1}$

37. In the figure below, ABCD is a rectangle with AE = EF = FB. What is the ratio of the areas of $\triangle CEF$ and that of the rectangle?



- (A) $\frac{1}{9}$ (B) $\frac{1}{6}$ (C) $\frac{1}{8}$ (D) $\frac{1}{3}$

38. A ladder leans against a vertical wall. The top of the ladder is 8 m above the ground. When the bottom of the ladder is moved 2 m farther away from the wall, the top of the ladder rests against the foot of the wall. What is the length of the ladder?

- (A) 10m (B) 12m (C) 15m (D) 17m

39. A rectangular pool 2 m wide and 6 m long is surrounded by a walkway of uniform width. If the total area of the walkway is 48m^2 , how wide, in meters, is the walkway?

- (A) 4 (B) 3 (C) 2 (D) 1

40. If the difference between mean and mode of a population is 48 and the median is 12, then the mean is

- (A) 28 (B) 38 (C) 42 (D) 52

Answers for quantitative reasoning section

| | | | | | | | |
|----|---|----|---|----|---|----|---|
| 1 | D | 11 | C | 21 | C | 31 | C |
| 2 | B | 12 | D | 22 | D | 32 | B |
| 3 | D | 13 | A | 23 | B | 33 | B |
| 4 | C | 14 | B | 24 | D | 34 | D |
| 5 | C | 15 | A | 25 | C | 35 | A |
| 6 | B | 16 | C | 26 | A | 36 | C |
| 7 | B | 17 | D | 27 | B | 37 | B |
| 8 | A | 18 | B | 28 | D | 38 | D |
| 9 | B | 19 | A | 29 | C | 39 | C |
| 10 | C | 20 | C | 30 | A | 40 | A |

PART -III-
Logical/Analytical Reasoning Section

1. **Girma ranks 7th from top and 28th from bottom in a class. How many students are there in class?**
 (A) 16 (B) 23 (C) 34 (D) 35
2. **6 exams are to be conducted on 6 consecutive days starting from Monday. The exams to be conducted are English, Mathematics, History, Physics, Chemistry and Biology but not in the same order. Neither Physics nor Mathematics can be conducted on Wednesday. There are 2 exams after Biology. There are 2 exams in between Biology and English. Neither Chemistry nor Mathematics is conducted on Friday. There are 3 exams in between Physics and Mathematics; and Mathematics exam is conducted after Biology.**

History exam is conducted on:

- (A) Tuesday (B) Wednesday (C) Thursday (D) Friday
3. **How many more triangles are there in the 1st figure as compared to the 2nd figure**

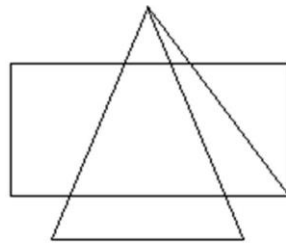


Fig 1

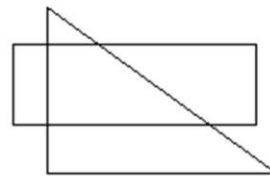


Fig 2

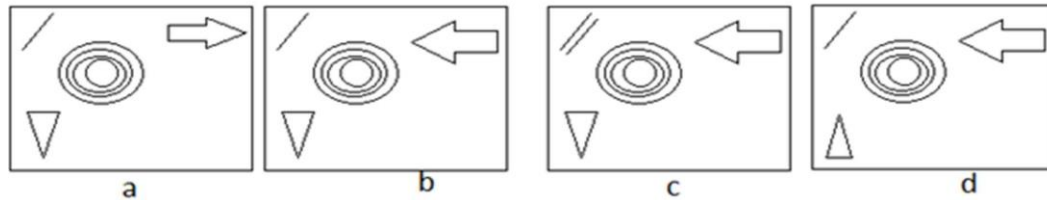
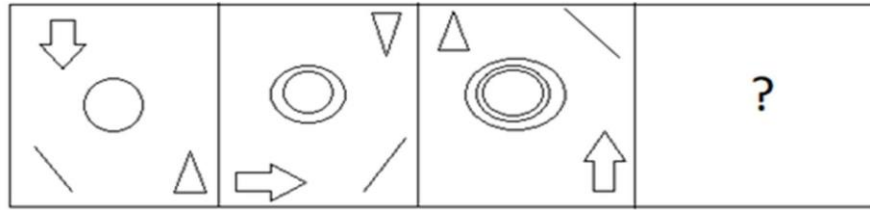
- (A) Five (B) Four (C) Three (D) Two
4. **Given below is a statement followed by 2 inferences. Choose the inference that can be inferred from the given statement by selecting the right option.**

Statement: In a rain affected cricket match Team A won against Team B by duckworth lewis rule by 50 runs. Inferences:

- I. Duckworth lewis is a rule to finalize the winner of a cricket match in case if the match is affected by rain.
- II. Team B batted first

- A) Only inference I follows
 - B) Only inference II follows
 - C) Both inferences I and II follow
 - D) Neither inference I nor inference II follows
5. **While counting the numbers from 1 to 10, Garry left one number. The number that he left was greater than 3 but less than 9. It was an even number and the number when reversed looks like another number. Which number is it?**
 (A) 2 (B) 6 (C) 4 (D) 8

6. Which figure replaces the question mark in the given figure series?



- (A) a (B) b (C) c (D) d

7. Three of the following words are alike in a certain way and one is different. Select the odd one

- (A) Goggle (B) Spectacles (C) Bifocals (D) Optical readers

8. Select the option that is related to the question mark in the same way as the second number is related to first and the fourth number is related to third.

(NOTE: operation should be performed on the whole numbers without breaking down the numbers into its constituent)

139:228; 122:211; 2:?

- (A) 189 (B) 91 (C) 198 (D) 89

Directions for questions 9 to 13: Read the following passage below and solve the questions based on it.

There are seven professors A, B, C, D, E, F and G teaching seven subjects History, Geography, Physics, Chemistry, Maths, Biology and English from Monday to Friday. Each professor teaches a different subject and not more than two subjects are taught on any one of the days.

- (i) Chemistry is taught by professor B on Tuesday.
- (ii) Professor D teaches on Friday but neither Geography nor Physics.
- (iii) Professor F teaches History but neither on Thursday nor on Friday.
- (iv) Professor A teaches English on the day on which History is taught.
- (v) Professor C teaches Maths on Monday.
- (vi) Geography and Chemistry are taught on the same day.
- (vii) Professor G teaches on Thursday.

9. On which of the following days is English taught?

- (A) Wednesday (B) Monday (C) Tuesday (D) Cannot be determined

- 10. Which of the following subjects is taught by professor G?**
 (A) Biology (B) Geography (C) Physics (D) Chemistry
- 11. On which of the following days is Geography taught?**
 (A) Monday (B) Tuesday (C) Wednesday (D) Thursday
- 12. Which subject is taught on Friday?**
 (A) Physics (B) History (C) Geography (D) Biology
- 13. Which of the following pairs of professors teaches on Tuesday?**
 (A) B and D (B) A and B (C) B and F (D) None of these
- 14. Abebech moved a distance of 75 meters towards the north. She then turned to her left and walked for 25 meters, turned left again and walked 80 meters. Finally, she turned to the right at an angle of 45°. In which direction was she moving finally?**
 (A) South-west (B) North-west (C) South (D) North-east
- 15. Decide which conclusion is logically follows:**
Statement:
 I. Only a few Designer is Painter
 II. No Painter is Writer
 III. All Designer is Singer
Conclusion:
 I. Some Painters being writers is a possibility
 II. Some singer is not writer
 (A) Only I follows (B) Only II follows (C) Both I & II follows (D) Neither I nor II
- 16. In a certain code "564" means "study very hard", "736" means "hard work pays" and "423" means "study and work". Which of the following is the code for "work"?**
 (A) 5 (B) 6 (C) 3 (D) 4
- 17. If the letters of the word "PRODUCT" are arranged alphabetically, then which letter would be farthest from the second letter of word?**
 (A) T (B) U (C) P (D) R
- 18. S and K are brothers. W is mother of S. M is mother of T. If T is son of K, then how is W related to M?**
 (A) Mother-in-law (B) Sister (C) Father-in-law (D) Mother
- 19. Identify the missing number in the series. 8, 13, 21, 34, 55, ?, 144?**
 (A) 21 (B) 34 (C) 55 (D) 89

20. If I talk to my girlfriend, then I do not need to take a pill for heartache. Which of the following statements are logically agreed based on the above sentence?

- a. I talked to my girlfriend
 - b. I did not need to take a pill for heartache
 - c. I needed to take a pill for heartache
 - d. I did not talk to my girlfriend
- (A) Ab only (B) ad & dc (C) dc only (D) ac & bd

21. Which of the following number is different from others in some conditions?

- (A) 63 (B) 42 (C) 27 (D) 7

Question 22-25: Seven dignitaries F, G, H, I, N, O, and P are to be seated together at a diplomatic ceremony. They will be seated in a row of seven chairs, numbered from 1 to 7, from front to back. Any seating is acceptable as long as all seven dignitaries are seated, one in each chair, and the seating conforms to the following rules:

- I. F must sit in the chair immediately behind O's chair.
- II. G cannot sit in the chair immediately in front of N's chair, and G cannot sit in the chair immediately behind N's chair.
- III. There must be exactly two chairs between the chairs of H and P.
- IV. There must be at least one chair between the chairs of I and P.
- V. N must sit in chair 3.

22. Which of the following seating arrangements, from chair 1 through chair 7, conforms to the rules?

- (A) E, I, N, P, G, O, H (B) G, P, N, I, H, O, F
(C) I, G, N, P, O, F, H (D) I, H, N, P, O, F, G

23. If F sits in chair 6 and H sits in chair 7, which of the following dignitaries must sit in chair 2?

- (A) I (B) G (C) N (D) O

24. If the seating arrangement, from chair 1 through chair 7, is G, I, N, H, O, F, P, which of the following pairs of dignitaries can exchange seats without violating the rules?

- (A) F and G (B) G and H (C) G and I (D) H and P

25. If O sits in chair 1 and H sits in chair 7, then the number of chairs between F's chair and I's chair must be:

- (A) Zero (B) Two (C) Three (D) One

Answers for logical reasoning section

| | | | | | | | | | |
|---|---|----|---|----|---|----|---|----|---|
| 1 | C | 6 | D | 11 | B | 16 | C | 21 | C |
| 2 | D | 7 | D | 12 | D | 17 | B | 22 | B |
| 3 | A | 8 | B | 13 | D | 18 | A | 23 | A |
| 4 | A | 9 | A | 14 | A | 19 | D | 24 | D |
| 5 | B | 10 | C | 15 | B | 20 | B | 25 | C |

References

1. IndiaBIX: Aptitude Questions and Answers (arithmetic aptitude, data interpretation, verbal reasoning, verbal ability, logical reasoning)
2. Admissions Exam Sample Questions University of Central Asia
3. GAT exam Addis Ababa University Part (1-27) by you tube. (Info. Tech Addis)
4. Graduate admission sample test 01
5. GAT Test /PDF/ Area
6. Aptitude Latest | PDF | Tests | Test (Assessment)