



# YASHOTEJ ACADEMY

## ENTRANCE EXAM

### GAT

CADET ID :  
TIME : 60 min

DATE :  
CLASS : 12TH

#### ENGLISH

Directions: Each of the following sentences has a blank space, followed by four options. Select the most appropriate option to fill in the blank and mark your response.

- Every NDA aspirant \_\_\_\_\_ respect the rules and regulations of the academy.  
a) might                      b) must  
c) could                        d) may
- \_\_\_\_\_ you please help me understand this mathematical formula?  
a) Could                        b) Shall  
c) Must                         d) Ought
- When the commanding officer was a young cadet, he \_\_\_\_\_ run ten miles without stopping.  
a) can                          b) should  
c) could                         d) may
- You \_\_\_\_\_ not leave the training grounds until the drill instructor dismisses you.  
a) might                        b) may  
c) ought                         d) would
- We \_\_\_\_\_ definitely win the inter-battalion sports championship if we practice every day.  
a) will                          b) need  
c) dare                         d) used to

Directions: Read the given sentence and select the option that correctly transforms it as directed without changing its core meaning.

- Transform into a Complex Sentence: "He is too weak to lift this heavy artillery."  
a) He is very weak and cannot lift this heavy artillery.  
b) He is so weak that he cannot lift this heavy artillery.  
c) Being weak, he cannot lift this heavy artillery.  
d) He is weak, so he cannot lift this heavy artillery.
- Transform into a Compound Sentence: "Seeing the enemy approach, the sentry sounded the alarm."  
a) The sentry saw the enemy approach and sounded the alarm.  
b) When the sentry saw the enemy approach, he sounded the alarm.

c) Because the sentry saw the enemy approach, he sounded the alarm.  
d) The sentry sounding the alarm saw the enemy approach.

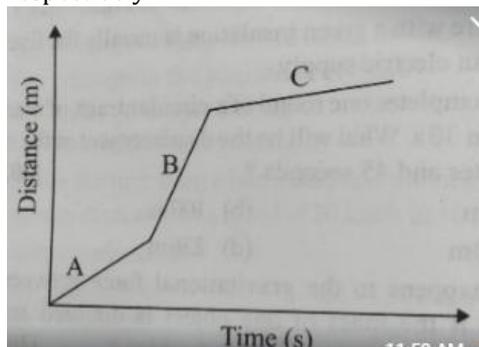
- Transform using 'No sooner': "As soon as the bugle blew, the march began."  
a) No sooner the bugle blew than the march began.  
b) No sooner did the bugle blow when the march began.  
c) No sooner did the bugle blow than the march began.  
d) No sooner had the bugle blow than the march began.
- Transform into a Compound Sentence: "You must work hard to pass the entrance exam."  
a) If you work hard, you will pass the entrance exam.  
b) Work hard, or you will not pass the entrance exam.  
c) By working hard, you will pass the entrance exam.  
d) Because you work hard, you will pass the entrance exam.
- Transform into a Simple Sentence: "Though he was injured, he completed the obstacle course."  
a) He was injured, but he completed the obstacle course.  
b) Despite being injured, he completed the obstacle course.  
c) He completed the obstacle course even though he was injured.  
d) He was injured, yet he completed the obstacle course.

Directions: Each of the following items consists of a sentence, the parts of which have been jumbled. These parts have been labelled as P, Q, R, and S. Select the most appropriate sequence to form a meaningful sentence.

- P: not only helps in clearing the written exam  
Q: it is a widely accepted fact that mastering foundation English  
R: but also significantly improves communication skills  
S: during the rigorous SSB interview process  
a) Q P R S                      b) P Q R S  
c) R S Q P                      d) Q R P S

12. **P:** the newly inducted cadets displayed remarkable resilience  
**Q:** during the initial phase of their academy training  
**R:** despite facing numerous logistical challenges  
**S:** and successfully completed the grueling obstacle course  
a) R Q P S                      b) P R Q S  
c) Q R P S                      d) R P Q S
13. **P:** under immense pressure is considered one of the most  
**Q:** the ability to remain calm and make swift decisions  
**R:** expected of any future military commander  
**S:** vital and indispensable qualities  
a) P Q S R                      b) Q P S R  
c) S R Q P                      d) Q S P R
14. **P:** to maintain a strategic advantage over potential adversaries  
**Q:** the armed forces must continuously modernize their equipment  
**R:** in an era characterized by rapid and unpredictable  
**S:** technological advancements across the globe  
a) R Q S P                      b) Q R S P  
c) R S Q P                      d) S R Q P
15. **P:** of the troops placed directly under their command  
**Q:** a true leader always ensures that the welfare and safety  
**R:** are prioritized above their own  
**S:** personal comfort in any given situation  
a) Q P R S                      b) Q P S R  
c) Q R P S                      d) P Q R S
- PHYSICS**
16. Assertion (A): In a pressure cooker food is cooked above boiling point.  
Reason (R): Boiling point of water increases as the pressure increases.  
a) Both A and R are true and R is the correct explanation of A  
b) Both A and R are true, but R is not the correct explanation of A  
c) A is true, but R is false  
d) A is false, but R is true
17. Which one of the following statement is true?  
a) Temperatures differing 25° on the Fahrenheit (F) scale must differ by 45° on the Celsius (C) scale  
b) 0°F corresponds to - 32°C  
c) Temperatures which differ by 10° on the Celsius scale must differ by 18° on the Fahrenheit scale  
d) Water at 90°C is warmer than water at 202°F
18. If an object having mass of 1 kg is subjected to a force of 1 N it moves with  
a) a speed of 1 m/s  
b) a speed of 1 km/s  
c) an acceleration of 10m/s<sup>2</sup>  
d) an acceleration of 1 m/s<sup>2</sup>
19. A passenger in a moving train tosses a five rupee coin. If the coin falls behind him, then the train must be moving with a uniform  
a) acceleration                      b) deceleration  
c) speed                                  d) velocity
20. The work done in moving a charge of 2 coulomb (C) from point A to point B is 24 J. What is the potential difference between A and B ?  
a) 48 V                                  b) 6V  
c) 12V                                  d) 0.08 V
21. A motorcycle has initial velocity of 5 m/s. After 3 seconds, the velocity is 7m/s. The displacement of the motorcycle in 3 seconds is:  
a) 21 m                                  b) 18m  
c) 36m                                  d) 6m
22. Which one of the following heat transfers is an example of convection?  
a) Heating of food in a microwave oven  
b) Boiling water in a pot on a gas stove  
c) Feeling the warmth in sun  
d) Heating a brass rod at one end and observing the temperature rise at the other end
23. Which one of the following is the correct relation between Celsius and Fahrenheit temperature scales?  
(Symbols carry their usual meanings)  
a)  $T_F = \frac{10}{3}T_C + 32$                       b)  $T_F = \frac{5}{9}T_C + 36$   
c)  $T_F = \frac{9}{5}T_C + 36$                       d)  $T_F = \frac{9}{5}T_C + 32$
24. If the Moon is brought closer to the Earth such that its distance from the Earth becomes half of the original distance, then the gravitational force of attraction between the Earth and the Moon would:  
a) reduce to half of its original value  
b) increase to two times of its original value  
c) remain the same as the original value.  
d) increase to four times of its original value.

25. Consider a journey by a car represented by the graph given below in three parts A, B and C. The speed of the car in these parts is  $v_a$ ,  $v_b$ , and  $v_c$ , respectively:



- a)  $v_a < v_b < v_c$   
 b)  $v_b > v_a > v_c$   
 c)  $v_a = v_b = v_c$   
 d)  $v_a > v_b; v_a < v_c$

### CHEMISTRY

26. The prefix  $10^{18}$  is \_\_\_\_\_.  
 a) giga  
 b) exa  
 c) kilo  
 d) mega
27. Principal, Azimuthal and magnetic quantum numbers are respectively related to:  
 a) Size, shape and orientation  
 b) Shape, size and orientation  
 c) Size, orientation and shape  
 d) None of the above
28. The most electronegative element in the periodic table is  
 a) Nitrogen  
 b) Oxygen  
 c) Chlorine  
 d) Fluorine
29. Which of the following molecules have trigonal planar geometry?  
 a)  $\text{BF}_3$   
 b)  $\text{NH}_3$   
 c)  $\text{PCl}_3$   
 d)  $\text{IF}_3$
30. Dominance of strong repulsive forces among the molecule of the gas:  
 a) depends on Z and indicates that  $Z = 1$   
 b) depends on Z and indicates that  $Z > 1$   
 c) depends on Z and indicates that  $Z < 1$   
 d) is independent of Z
31. The correct relationship between free energy change in a reaction and the corresponding equilibrium constant  $K_c$  is  
 a)  $-\Delta G = RT \ln K_c$   
 b)  $\Delta G^0 = RT \ln K_c$   
 c)  $-\Delta G^0 = RT \ln K_c$   
 d)  $\Delta G = RT \ln K_c$
32. Which of the following is the weakest base?  
 a) NaOH  
 b)  $\text{Ca}(\text{OH})_2$   
 c)  $\text{NH}_4\text{OH}$   
 d) KOH

33. Consider the following reaction:  
 $\text{Zn} + \text{Cu}^{2+} \rightarrow \text{Zn}^{2+} + \text{Cu}$   
 With reference to the above, which one of the following is the correct statement?  
 a) Zn is reduced to  $\text{Zn}^{2+}$  ions.  
 b) Zn is oxidised to  $\text{Zn}^{2+}$  ions.  
 c)  $\text{Zn}^{2+}$  ions are oxidised to Zn.  
 d)  $\text{Cu}^{2+}$  ions are oxidized to Cu.

34. Permanent hardness from water can be removed by adding \_\_\_\_\_.  
 a)  $\text{Na}_2\text{CO}_3$   
 b) K  
 c)  $\text{Ca}(\text{OCl})\text{Cl}$   
 d)  $\text{Cl}_2$
35. Which of the following alkaline earth metal ions has the highest ionic mobility in aqua solution?  
 a)  $\text{Be}^{2+}$   
 b)  $\text{Ca}^{2+}$   
 c)  $\text{Ba}^{2+}$   
 d)  $\text{Mg}^{2+}$

### GEOGRAPHY

36. Which ocean current is warm and flows along the eastern coast of a continent?  
 a) Brazil Current  
 b) Humboldt Current  
 c) Canary Current  
 d) California Current
37. With reference to plate boundaries, consider the following statements:  
 1) Subduction zones occur at convergent plate boundaries where oceanic lithosphere descends into the mantle.  
 2) Transform boundaries are sites of major crustal shortening and mountain building.  
 a) Both statements are incorrect  
 b) Only Statement 1 is correct  
 c) Only Statement 2 is correct  
 d) Both statements are correct
38. What term describes the very slow downslope movement of soil and regolith under gravity?  
 a) Earthflow  
 b) Creep  
 c) Slump  
 d) Rockfall
39. Assertion (A): A temperature inversion promotes the dispersion of pollutants.  
 Reason (R): Inversion layers enhance strong vertical mixing.  
 a) Both A and R are true and R is the correct explanation of A  
 b) Both A and R are true but R is not the correct explanation of A  
 c) A is true but R is false  
 d) A is false but R is true
40. The steep region between the continental shelf and the deep ocean floor is the:  
 a) pelagic zone  
 b) continental slope  
 c) continental rise  
 d) bathyal zone

41. Consider the following statements about oceanic ridges and trenches:  
 1) Mid-ocean ridges are divergent boundaries where new oceanic crust is created.  
 2) Deep ocean trenches are sites of crustal formation where plates separate.  
 a) 1 only                      b) 2 only  
 c) 1 and 2                      d) Neither 1 nor 2
42. Isostasy is a concept that most directly deals with:  
 a) gravitational balance of Earth's lithosphere  
 b) movement of oceanic currents  
 c) heat transfer in the mantle  
 d) circulation of the atmosphere
43. With reference to soil formation, consider the following statements:  
 1) Climate significantly influences the rate of soil formation and weathering.  
 2) The parent material has no effect on soil composition.  
 3) Biological activity contributes organic matter and aids in soil development.  
 a) Only 1                      b) Only 2  
 c) Only 3                      d) All of 1, 2 and 3
44. Which mineral group is most abundant in Earth's crust?  
 a) Carbonates                      b) Oxides  
 c) Halides                      d) Feldspars
45. Consider the following statements about soil profiles:  
 1) The A-horizon (topsoil) is typically rich in organic material and humus.  
 2) The B-horizon (subsoil) is often a zone of accumulation of leached minerals like iron and clay.  
 a) 1 only                      b) 2 only  
 c) 1 and 2                      d) Neither 1 nor 2
46. Which mineral is the hardest according to Mohs' hardness scale?  
 a) Topaz                      b) Corundum  
 c) Diamond                      d) Quartz
47. Assertion (A): The Coriolis force deflects moving objects to the left in the Northern Hemisphere.  
 Reason (R): Earth rotates from west to east.  
 a) Both A and R are true and R is the correct explanation of A  
 b) Both A and R are true but R is not the correct explanation of A  
 c) A is true but R is false  
 d) A is false but R is true
48. Which zone of the Earth is characterised by brittle deformation resulting in earthquakes?  
 a) Upper crust                      b) Lower mantle  
 c) Asthenosphere                      d) Outer core
49. Concerning seismic waves, consider the following statements:  
 1) P-waves can travel through both solids and liquids.  
 2) S-waves are transverse waves that travel faster than P-waves.  
 a) Both statements are true  
 b) Only Statement 1 is true  
 c) Only Statement 2 is true  
 d) Neither statement is true
50. Which cycle describes the continuous movement of water among the atmosphere, oceans and land?  
 a) Carbon cycle  
 b) Nitrogen cycle  
 c) Hydrologic (water) cycle  
 d) Oxygen cycle
- GOV QUESTIONS**
51. Animal is to meat as Mine is to \_\_\_\_\_  
 a) Cloth                      b) Paper  
 c) Mineral                      d) Fabric
52. Which item will stand middle if the following are rearranged proper order?  
 a) College                      b) Marriage  
 c) Kindergarten                      d) Profession
53. Which word does not belong to the same class as others?  
 a) Deer                      b) Kangaroo  
 c) Zebra                      d) Hyena
54. Write the number which will come LAST in the dictionary?  
 a) sports                      b) sparrow  
 c) study                      d) speaker
55. Which group of numbers does not belong to the same class as others?  
 a) 5212                      b) 7111  
 c) 3214                      d) 1608
56. Write the number of the word which will come last in the dictionary?  
 a) people                      b) calculator  
 c) etiquette                      d) newspaper
57. Write the number of the word which will come last in the dictionary?  
 a) urgent                      b) utmost  
 c) university                      d) umbrella

58. Write the number of the word which will come last in the dictionary?

- a) traffic
- b) helicopter
- c) vaccination
- d) judgement

59. Write the number of the word which will come last in the dictionary?

- a) name
- b) common
- c) things
- d) mouse

60. The underlined statement has four reasons for its justification. They are listed below the statement serially. Write the serial number of the reason you think correct.

Majority of the students in many schools do not pass in the final examination. Because:

- a) These schools should be closed down as these have become unproductive.
- b) The teachers of these schools should immediately be retrenched.
- c) These schools are following different syllabus.
- d) The students are not getting proper guidance from their teachers.

