



RAJIV GANDHI ACADEMY FOR AVIATION TECHNOLOGY
THIRUVANANTHAPURAM
(A Government of Kerala Institution)

ADMISSION TEST 2024

Roll No

Duration : 1 Hour

Name:

Total Marks : 50

Signature :

Date of Examination

Time of Examination

INSTRUCTIONS

1. Use ball point pen - blue colour
2. No negative marking
3. All questions carry equal marks (1 mark for each question)
4. Question No.33 with Part A and Part B carries $\frac{1}{2}$ mark for each part
5. Candidates should write their name and roll number on each page and sign each page including blank pages
6. No over writing /rewriting/cutting the answer is allowed, such answers will not be evaluated
7. Candidates should do rough calculation only on the blank sheet (last page)
8. No calculator/smart watch is allowed in the examination hall
9. Your answers of each question should be marked (✓)

Name.....Roll No.....Sign.....

1. An aircraft departs from Trivandrum with a speed of 700 km/hr at 10:30 am. It arrives at its destination Chennai at 11:15 am. At what time will it reach back to Trivandrum if it departs from Chennai 30 mins after it arrived, assuming its speed while returning is 600 km/hr.
(A) 01:03 pm (B) 12:20 pm (C) 12:37 pm (D) 11:45 am
2. Newton's first law of motion describes:
(A) Inertia (B) Energy (C) Work (D) Moment of Inertia
3. Current in a circuit with potential difference = 10 V and Resistance = 2 ohm is:
(A) 5 Ampere (B) 20 Ampere (C) 8 Ampere (D) 12 Ampere
4. The absorption of ink by blotting paper involves
(A) Viscosity of ink (b) Capillary action phenomenon
(c) Diffusion of ink through the blotting (d) Siphon action
5. It takes much longer to cook food in the hills than in the plains, because
(A) In the hills the atmospheric pressure is lower than that in the plains and therefore water boils at a temperature lower than 100°C causing an increase in cooking time
(B) Due to low atmospheric pressure on the hills, the water boils at a temperature higher than 100°C and therefore water takes longer to boil
(C) In the hills the atmospheric density is low and therefore a lot of heat is lost to the atmosphere
(D) In the hills the humidity is high and therefore a lot of heat is absorbed by the atmosphere leaving very little heat for cooking
6. Railway tracks are banked on curves
(A) necessary centrifugal force may be obtained from the horizontal component weight of the train
(B) to avoid frictional force between the tracks and wheels
(C) necessary centripetal force may be obtained from the horizontal component of the weight of the train
(D) the train may not fly off in the opposite direction
7. A person goes 20m towards south, then turns left and goes 20 m and turns again to the left and goes 20m and then turns to the right and goes 60 m. In which direction is he going finally?
(A) North , (B) South (C) East (D) West
8. The rate of change of distance which is expressed as distance divided by time is
(A) Acceleration (B) Velocity (C) Torque (D) Horse power

Name.....Roll No.....Sign.....

9. 100 degree C -
(A) 32 F (B) 0 F (C) 212 F (D) 400 K
10. If the distance between the sun and the earth is double, then the gravitational force on earth will be?
(A) Double (B) Four times (C) One fourth (D) Half
11. The lift of an aeroplane is caused by?
(A) Bernoulli's theorem (B) Pascal's law
(C) Theorem of continuity (D) Law of gravitation
12. The tidal wave on a sea is mainly due to?
(A) The gravitational effect of moon on earth
(B) gravitational effect of sun on earth Pascal's law
(C) gravitation of earth on moon
(D) none of the above
13. If an elevator is moving vertically up with an acceleration 'a', the force exerted on the floor by a passenger of mass M is
(A) Ma (B) Mg (C) Zero (D) $M(g-a)$ (E) $M(g+a)$
14. Which of the following is not a unit of time?
(A) Leap year (B) Micro second (C) Lunar month
(D) Light year (E) Nano second
15. Which of the following sets of quantities have the same dimensional formulae?
(A) Frequency, angular frequency, and angular momentum
(B) Surface tension, stress, and spring constant
(C) Acceleration, momentum, and retardation
(D) Thermal capacity, specific heat, and entropy
16. $\frac{3}{4}$ part of tank is full of water. When 30 litres of water is taken out it becomes empty. The capacity of the tank is?
(A) 36 (B) 42 (C) 40 (D) 33
17. In Δabc , right-angled at b, $ab = 24$ cm, $bc = 7$ cm. The value of $\tan c$ is:
(A) $12/7$ (B) $24/7$ (C) $20/7$ (D) $7/24$
18. $\sin(90^\circ - a)$ and $\cos a$ are:
(A) different (B) same (C) not related (D) None of the above
19. If the order of the matrix is $m \times n$, then how many elements will there be in the matrix?
(A) mn (B) $m^2 n^2$ (C) mn^2 (D) $2mn$

Name..... Roll No..... Sign.....

20. What will be the probability of getting odd numbers if a dice is thrown?
(A) $\frac{1}{2}$ (B) 2 (C) $\frac{4}{2}$ (D) $\frac{5}{2}$
21. Which of the following points lie on the x-y plane?
(A) (1,5,0) (B) (2, -3,1) (C) (0,3,1) (D) (1,0,2)
22. If January 1, 1996, was Monday, what day of the week was January 1, 1997?
(A) Thursday (B) Wednesday (C) Friday (D) Sunday
23. If Suresh borrows Rs. 36000 from Mahesh at rate of interest 6% S.I, at the end of six years how much interest Suresh has to pay along with principal amount?
(A) Rs. 12560 (B) Rs. 12960 (C) Rs. 13500 (D) Rs. 14500
24. Worker A completes a task in 8 days and worker B completes the same task in 10 days. If both A and B work together, in how many days they will complete the task?
(A) $\frac{40}{10}$ days. (B) $\frac{40}{9}$ days. (C) $\frac{40}{8}$ days. (D) $\frac{40}{7}$ days.
25. A: B: C is in the ratio of 3: 2: 5. How much money will C get out of Rs 1260?
(A) 252 (B) 125 (C) 503 (D) None of these
26. The sum of two consecutive even integers is 18. What are the integers?
(A) 6, 12 (B) 8, 10 (C) 9, 9 (D) 4, 16
27. Given that $\tan A \times \tan (90-A) = 1$, the value of $\tan 1^\circ \times \tan 2^\circ \times \tan 3^\circ \dots \times \tan 89^\circ$ is:
(A) -1 (B) 0 (C) 1 (D) 0.5
28. What is the most correct value of n if $410 \times 642 = 800 \times 4n$?
(A) 76 (B) 40 (C) 82 (D) 95
29. If m & n are natural number such that $2^m - 2^n = 960$. What is the value of m
(A) 10 (B) 12 (C) 11 (D) Cannot determine.
30. Complete the series 2, 5, 9, 19, 37.....
(A) 76 (B) 74 (C) 75 (D) None of these.
31. Advantages of fuel injection system over carburetor system is
(A) Easier hot engine starting
(B) Better fuel distribution to the cylinder
(C) Less difficulty with hot water vapour locks during ground operations
(D) More power can be developed

Name.....Roll No.....Sign.....

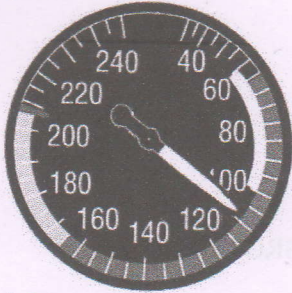
32. What causes wind

- (A) Coriolis force (B) Pressure Difference
(C) Rotation of the earth (D) Water vapour

33. The shown images are that of an instrument called air speed indicator. This instrument indicates the speed of the aircraft. It should be a simple round dial with a single needle and different colours around the circumference.

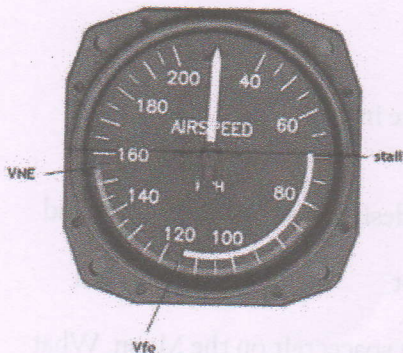
Look at the images given below and identify what speed is being shown

(Part A).



- (A) 110 (B) 140 (C) 150 (D) 120

(Part B)



- (A) 0 (B) 30 (C) 200 (D) 130

34. Which is the lowest layer of Atmosphere.....

- (A) Troposphere (B) Thermosphere (C) Mesosphere

35. What is 'Lift'

- (A) Mechanical force (B) Aerodynamic force (C) Force due to gravity

36. Dr. Sigmund Freud was associated with

- (A) Aerodynamics (B) Physics (C) Psychology

37. Who is considered the "Father of Aviation"?

- (A) Charles Lindbergh (B) Wilbur Wright
(C) Orville Wright (D) Alberto Santos-Dumont

38. If a pilot notices a sudden change on the Vertical Speed Indicator, what does it indicate?

- (A) A change in the aircraft's altitude
(B) A change in the rate of climb or descent
(C) A change in airspeed (D) A change in heading direction

Name.....Roll No.....Sign.....

39. Which aircraft has wings but no motor?
(A) Helicopter (B) Glider (C) Blimp (D) Biplane
40. What is not one of the four aerodynamic forces?
(A) Lift (B) Weight (C) Drag (D) Pressure
41. Who is the current men's singles Wimbledon tennis champion
(A) Novak Djokovic (B) Carlos Alcaraz (C) Rafael Nadal
42. Which is a propeller driven aircraft
(A) Boeing 737 (B) ATR 72 (C) Airbus 320
43. The spacecraft designed by Boeing is named as.....
(A) Orion (B) Crew Dragon (C) Starliner
44. Who is the current Chairman of Indian Space Research Organisation (ISRO)
(A) Madhavan Nair
(B) Dr. Sreedharapanicker Somanath
(C) Kailasavadivoo Sivan
(D) Dr. K. Radhakrishnan
45. What is the minimum age for attaining commercial pilot licence in India
(A) 17 (B) 18 (C) 16 (D) 21
46. What is the name of India's first aircraft carrier that was fully designed and built in India and commissioned in 2022
(A) INS Vikrant (B) INS Viraat (C) INS Arihant (D) INS Vishal
47. India recently became the fourth country to successfully land a spacecraft on the Moon. What was the name of the mission
(A) Mangalyaan (B) Chandrayaan-2 (C) Chandrayaan-3 (D) Aditya-L1
48. What is the main function of the ozone layer
(A) Absorbs ultraviolet radiation
(B) Creates weather systems
(C) Protects against space debris
(D) Provides oxygen for respiration
49. Which two countries were responsible for the development of the Concorde
(A) United States and United Kingdom (B) France and United Kingdom
(C) Russia and France (D) France and Germany
50. Who is the present Indian Civil Aviation Minister
(A) Shri Jyotiraditya Scindia (B) Shri. Kinjarapu Rammohan Naidu
(C) Shri Piyush Goyal (D) Shri Rahul Gandhi