

RRB ALP Exam Papers



EBOOK

R.R.B.**PREVIOUS
PAPER**

Assistant Loco Pilot AHMEDABAD Based on Memory

1. If the point A (7, k) is the vertex of an isosceles triangle ABC with base BC, where B = (2, 4) and C = (6, 10), then what is 'k'?
 1) 6 2) 3 3) 4 4) 5
2. If the distance between the points (na, nb) and (a, b) is 4 times the distance between the points (5a, 5b) and (a, b), then 'n' is equal to-
 a) 11 or -13 2) 11 3) 13 4) 17 or -15
3. ABC is a triangle whose centroid is G. If A is (-3, 1) B is (2, b), C is (a, -4) and G is (1, -1) then find 'a' and 'b'.
 1) a = 4, b = 0 2) a = 0, b = 4
 3) a = 3, b = 2 4) a = 5, b = 2
4. An angle is equal to $\frac{3\pi}{5}$ radians. What is its measure in degrees?
 1) 145° 2) 72° 3) 108° 4) 120°
5. The equation of a straight line is $2x-3y+2=0$. What is its slope?
 1) $\frac{2}{3}$ 2) -2 3) 2 4) $-\frac{2}{3}$
6. Find the range of values of x, which satisfy the inequality-

$$-\frac{1}{5} \leq \frac{3x}{10} + 1 < \frac{2}{5}, x \in \mathbb{R}$$
 1) (x : x ∈ ℝ, 0.3 ≤ x < 9) 2) (x : x ∈ ℝ, -4 ≤ x < -2)
 3) (x : x ∈ ℝ, 4 ≥ x > -2) 4) (x : x ∈ ℝ, 5 < x ≤ 8)

7. Read the law given below and identify the same:
The mass on any substance liberated from an electrolyte is directly proportional to the quantity of charge passing through the solution.
- 1) Avogadro's law
 - 2) Faraday's first law of electrolysis
 - 3) Faraday's second law of electrolysis
 - 4) Kirchhaoff's law of electricity
8. The value of Avogadro's constant is-
- 1) 6.022×10^{23} per mole
 - 2) 58.04×10^{-2} per mole
 - 3) 69.51×10^{-18} per mole
 - 4) 6.022×10^{14} per mole
9. In an experiment, 295 mg of copper is deposited when a current of 500 mA passes for 30 minutes. Find the electrochemical equivalent of copper-
- 1) 32.77×10^{-8} kg/ coulomb
 - 2) 58.4 kg/ coulomb
 - 3) 109.5×10^8 kg/ coulomb
 4. $\frac{1}{32.77 \times 10^{-8}}$ kg/ coulomb
10. Which one of the following is the correct unit of angular velocity?
- 1) m/ minute
 - 2) cm/ sec²
 - 3) cm/sec
 - 4) radians/ sec
11. The force by which a body is attracted towards the centre of the earth is called-
- 1) Gravitational force
 - 2) Mass
 - 3) Momentum
 - 4) Impulsive force
12. The maximum displacement of a vibrating body from its mean position is called-
- 1) Gyration
 - 2) Wavelength
 - 3) Amplitude
 - 4) Impulse
13. The kinetic energy of a body depends upon-
- 1) Mass, gravity and height
 - 2) Its mass alone
 - 3) Its velocity alone
 - 4) Both mass and velocity
14. A ball weighing 25 grams is thrown vertically into the air. It takes 15 seconds to reach its highest point. How much time would it take to reach the ground from its highest point?
- 1) More data are required for calculation
 - 2) Less than 15 seconds
 - 3) More than 15 seconds
 - 4) 15 seconds

- 15.** The term 'Squirrel Cage' is associated with
- 1) Pressure gauges
 - 2) Internal combustion engines
 - 3) Potentiometers
 - 4) Electric motors
- 16.** The phenomenon of increase in the temperature of the earth's atmosphere due to absorption of the infra-red radiations reflected from the earth's surface is called-
- 1) Tsunami
 - 2) Solar heating
 - 3) Green-house effect
 - 4) Seismic effect
- 17.** Why is it recommended that people should not use charcoal or gas stoves in closed rooms?
- 1) The electrical wiring in the room may catch fire
 - 2) The stoves will get extinguished
 - 3) It can cause carbon monoxide poisoning
 - 4) The stoves may burst
- 18.** The most effective way to improve safety in a vast organisation like the Indian Railways is to
- 1) Ignore small acts of negligence by the staff
 - 2) Carry out frequent checks
 - 3) Educate the staff at all levels
 - 4) Punish defaulting staff
- 19.** The density of water is maximum at
- 1) 100°C
 - 2) 0°C
 - 3) -273°C
 - 4) 4°C
- 20.** Which one of the following quantities does not have a unit?
- 1) Velocity
 - 2) Density
 - 3) Specific Gravity
 - 4) Mass
- 21.** A Swimmer finds it easier to swim in sea water than in plain water. Why?
- 1) Sea water has less contamination
 - 2) Sea waves help a swimmer to swim
 - 3) Sea water has higher density than plain water
 - 4) Sea has a much higher volume of water

- 22.** Humidity refers to-
- 1) Both temperature and moisture contents of the air
 - 2) Temperature of the air
 - 3) Moisture content of the air
 - 4) Pressure of the air
- 23.** Boyle's law states that-
- 1) Volume is directly proportional to temperature
 - 2) Pressure is inversely proportional to temperature
 - 3) Pressure is directly proportional to temperature
 - 4) Pressure is inversely proportional to volume
- 24.** Purity of milk is confirmed by-
- 1) Barometer
 - 2) Lactometer
 - 3) Altimeter
 - 4) Hygroscope
- 25.** A stick is dipped in a vessel containing water. It appears bent due to the property of-
- 1) Reflection
 - 2) Newton's Law of Motion
 - 3) Refraction
 - 4) Buoyancy
- 26.** The temperature on the surface of the sun is about-
- 1) $8 \times 10^{15}^{\circ}\text{C}$
 - 2) 500°C
 - 3) 6000°C
 - 4) 1000°C
- 27.** The planet farthest from the Sun is-
- 1) Pluto
 - 2) Mercury
 - 3) Jupiter
 - 4) Neptune
- 28.** Which one of the following is measured on the 'RICHTER SCALE'?
- 1) The speed of a rocket 5 seconds after take off
 - 2) The intensity of thunderstorm
 - 3) The intensity of an earthquake
 - 4) The speed at which a player serves the ball in Lawn Tennis
- 29.** As a train approaches us, the frequency or shrillness of its whistle increases. This phenomenon is explained by-
- 1) Big Bang Theory
 - 2) Doppler Effect
 - 3) Charles' Law
 - 4) Archimedes Principle

30. The load on a spring per unit deflection is called-
- 1) Stress 2) Flexibility 3) Stiffness 4) Strain
31. The term acceleration means-
- 1) Maximum speed of a vehicle 2) Rate of change of time
3) Rate of change of velocity 4) Rate of change of distance
32. A body of mass 10 kg accelerates from rest at the rate of 3 m/sec^2 . What distance would the body travel in 10 seconds?
- 1) 250 metres 2) 100 metres 3) 150 metres 4) 200 metres
33. The efficiency of a heat engine is 40%. If 10,000 joules of heat energy are supplied to it, then the useful work done by the engine would be-
- 1) 40,000 Joules 2) 10,000 Joules 3) 25,000 Joules 4) 4,000 Joules
34. A gas is allowed to expand at constant temperature from an initial volume of 10 ml to a final volume of 300 ml. At the end of the expansion, the pressure of the gas was found to be 1 atmosphere. What was the initial pressure of the gas?
- 1) 9 atmosphere 2) 1 atmosphere 3) 3 atmosphere 4) $\frac{1}{3}$ atmosphere
35. There are three non-collinear points. How many circles can be drawn passing through them?
- 1) Infinite 2) One 3) Two 4) Three
36. What do you understand by the term 'Absolute Pressure'?
- 1) It is the atmospheric pressure at mean sea level
2) It is the atmospheric pressure expressed in kg/cm^2
3) It is the pressure equal to the algebraic sum of atmospheric and gauge pressures
4) It is the pressure as seen on the gauge of a pressure measuring instrument

Directions (Qs. 37 to 39): Study the following number sequence to answer these questions.

5 1 4 7 3 9 8 5 7 2 6 3 1 5 8 6 3 8 5 2 2 4 3 4 9 6

37. How many odd numbers in the above sequence are immediately followed by an odd number?
- 1) More than 4 2) 2 3) 3 4) 4

38. How many even numbers are there in the sequence which are immediately preceded by an odd number but immediately followed by an even number?

- 1) 5 2) 2 3) 3 4) 4

39. How many odd numbers are there in the sequence which are immediately preceded and also immediately followed by an even number-

- 1) 5 2) 2 3) 3 4) 4

40. Study the following number sequence-

5 9 8 1 3 2 7 4 3 8

If the first and the second digits in the sequence are interchanged, also the third and fourth digits, the fifth and sixth digits, and so on, then which digit would be the seventh counting to your left?

- 1) 8 2) 1 3) 4 4) 7

41. If the numbers from 1 to 45 which are exactly divisible by 3 are arranged in an ascending order, minimum number being kept first, then which number would come at the ninth place from the first?

- 1) 30 2) 21 3) 24 4) 27

42. Find the value of-

$$8.55 \times 8.55 - 2 \times 8.55 \times 3.55 + 3.55 \times 3.55$$

- 1) 27.5 2) 20 3) 25 4) 36

43. A husband and wife have six married sons and each of them has four children. The total number of members in the family is-

- 1) 40 2) 30 3) 36 4) 38

Directions (Qs. 44 to 46): In each of the letter series given in these questions, some of the letters are missing. The missing letters are given in that order as one of the alternatives below it. Choose the correct alternative.

44. ba-b-aab-a-b

- 1) babb 2) abab 3) abba 4) baba

45. mnonopqopqrs -----

- 1) qrstu 2) mnopq 3) oqrst 4) pqrst

46. c-bba-cab-ac-ab-ac

- 1) bcacb 2) abcbc 3) acbcb 4) babcc

47. $\frac{1}{4} \left(\frac{1}{216} \right)^{-\frac{2}{3}} \div \left(\frac{1}{27} \right)^{-\frac{4}{3}} = ?$

1) $\frac{1}{9}$

2) $\frac{1}{6}$

3) $\frac{5}{36}$

4) $\frac{1}{12}$

Directions (Qs. 48 & 49): Study the information given below to answer these questions:

On a playground, Dinesh, Kunal, Nitin, Atul and Prashant are standing as described below facing the North.

- i. Kunal is 40 metres to the right of Atul
- ii. Dinesh is 60 metres to the South of Kunal
- iii. Nitin is 25 metres to the West of Atul
- iv. Prashant is 100 metres to the North of Dinesh

48. Who is to the North-east of the person who is to the left of Kunal?

- 1) Prashant 2) Dinesh 3) Nitin 4) Atul

49. If a boy walks from Nitin, meets Atul, followed by Kunal, Dinesh and Prashant, then how many metres has he walked if he travelled the straight distance all through?

- 1) 245 metres 2) 155 metres 3) 185 metres 4) 225 metres

50. Roshan is taller than Rahul who is shorter than Sushil. Mirza is taller than Harry but shorter than Rahul. Sushil is shorter than Roshan. Who is the tallest?

- 1) Harry 2) Roshan 3) Sushil 4) Rahul

51. Roshan is taller than Rahul who is shorter than Sushil. Mirza is taller than Harry but shorter than Rahul. Sushil is shorter than Roshan. Who is the shortest?

- 1) Roshan 2) Harry 3) Mirza 4) Rahul

52. Which one of the following causes of environmental pollution cannot be attributed to human beings?

- 1) Uncontrolled growth of human population
- 2) Rapid industrialisation
- 3) Rapid urbanisation
- 4) Volcanic eruptions

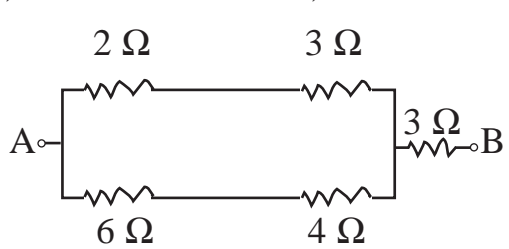
- _____

- 62.** How do you understand by the term 'Binding Energy'?
- 1) Energy released when a nucleus is formed from protons and neutrons
 - 2) The force of attraction between an electron in the first orbit and the nucleus
 - 3) Electron belonging to the same major energy level
 - 4) Energy associated with a photon
- 63.** Which of the following statements is wrong?
- 1) Ionic bonds are non-rigid and non-directional
 - 2) Compounds formed by ionic bonds are non-conductors of electricity
 - 3) Ionic bonds are formed by transfer of electrons from a metal to a non-metal atom
 - 4) Compounds formed by ionic bonds are hard and brittle
- 64.** Arrange the following materials in the order of decreasing conductivity:
Silicon, Glass, Aluminium, Silver
- 1) Glass, Silicon, Aluminium, Silver
 - 2) Aluminium, Silver, Glass, Silicon
 - 3) Silver, Silicon, Aluminium, Glass
 - 4) Silver, Aluminium, Silicon, Glass
- 65.** If a barometer carries water instead of mercury, then the height of the column for a pressure equivalent to 75 cm of mercury would be-
- 1) 1050 cm
 - 2) 1020 cm
 - 3) 1000 cm
 - 4) 5.5 cm
- 66.** The term EURO-II in the context of modern cars refers to-
- 1) Emission from cars
 - 2) Speed of cars
 - 3) Fuel efficiency
 - 4) Torque available
- 67.** What is the ultimate benefit of good communication in a vast organisation like the Indian Railways?
- 1) Improved productivity and profits
 - 2) Reduced frustration among the employees
 - 3) Development of good human relations
 - 4) Improved image of the organisation

68. What is the term AGMARK used for?
- 1) Grading various agricultural commodities
 - 2) Grading battery toys
 - 3) Grading polyester textiles
 - 4) Grading engine lubricating oils
69. The standard used in India for certifying the quality of Industrial goods is-
- 1) ISI
 - 2) ISO
 - 3) ITI
 - 4) CEERI
70. An electric heater of 1 kW rating is used to heat water everyday for 2 hours. In 10 days, it will consume-
- 1) 20 kWh
 - 2) 2 kWh
 - 3) 0.2 kWh
 - 4) 200 kWh
71. Ozone is a gas having atoms of Oxygen in its molecules.
- 1) Four
 - 2) One
 - 3) Two
 - 4) Three
72. A Family consumes 14.5 Kg Of LPG in 29 days. The calorific value of LPG is 55 KJ/ gm. the average energy consumed per day is-
- 1) 275 kj
 - 2) 27.5 kj
 - 3) 27,500 kj
 - 4) 0.275 kj
73. The chemical formula of natural gas is-
- 1) C_3H_8
 - 2) CH_4
 - 3) C_4H_{10}
 - 4) C_2H_6
74. The percentage of carbon in one molecule of carbon dioxide is approximately-
- 1) 2.73%
 - 2) 72.7%
 - 3) 80%
 - 4) 27.3%
75. The term 'Cracking' in the context of organic molecules is-
- 1) The process of fractional distillation in the refineries
 - 2) Breaking of a large alkane molecule into smaller hydrocarbon molecules
 - 3) A nuclear reaction where in the nucleus is broken
 - 4) Use of fire crackers to produce heat to initiate certain chemical reactions
76. In a nuclear power station, which one of the following is commonly used as a fuel for producing heat?
- 1) Coal
 - 2) Helium
 - 3) Heavy Water
 - 4) Uranium-235
77. Fission of one nucleus releases 3.2×10^{-11} Joules energy. The number of fissions required to produce energy at the rate of 10 MW for 10 hours is-
- 1) 6.5×10^{50}
 - 2) 2.1×10^{12}
 - 3) 1.125×10^{22}
 - 4) 1800
78. A stove consumes 1 gram of kerosene in 48 seconds. if the calorific value of kerosene is 48 KJ / gm, then the power of consumption of the stove in kW is-
- 1) 0.1
 - 2) 1.5
 - 3) 1
 - 4) 0.5

- 79.** If acceleration due to gravity is 10 m/sec^2 , then the potential energy of a body of mass 1 kg kept at a height of 5 metres is-
- 1) 50 Joules 2) 500 Joules 3) 100 Joules 4) 10 Joules
- 80.** A boat weighing 200 kg floats on water. The weight of water displaced would be-
- 1) 220 kg 2) 0 kg 3) 180 kg 4) 200 kg
- 81.** An iron spherical ball having an external volume of 10 cu cm is dipped in a beaker containing water of specific gravity 1 gm/ cu cm. The weight of the ball would be reduced by-
- 1) Collecting more data for making the calculation
2) 0.1 gm
3) 1 gm
4) 10 gm
- 82.** Archimedes Principle is related to-
- 1) laws of floatation 2) Right-angled triangle
3) Laws of gravity 4) Relation between current and voltage
- 83.** The commonly used washing soda is-
- 1) Sodium Bicarbonate 2) Sodium Carbonate
3) Sodium Chloride 4) Magnesium Chloride
- 84.** The chemical formula of 'plaster of paris' is-
- 1) $2\text{CaSO}_4 \cdot \frac{1}{2} \text{H}_2\text{O}$ 2) $\text{Ca}(\text{OH})_2$
3) $(\text{CaSO}_4)_2 \cdot \text{H}_2\text{O}$ 4) CaOCl_2
- 85.** A sanitary worker uses a white substance to clean water tanks. The substance has a strong smell of chlorine. The substance is-
- 1) Bleaching powder 2) Slaked lime
3) Baking powder 4) Common salt
- 86.** A person bakes a cake. It turns out to be hard and small in size. Which ingredient has he forgotten to add that would have caused the cake to rise and become light?
- 1) Cooking oil 2) Baking powder
3) Bleaching powder 4) Sugar

- 87.** A White chemical compound becomes hard on mixing proper quantity of water. It is also used in surgery to repair fractured bones. What is it?
- 1) Plaster of paris 2) Slaked lime 3) Bleaching power 4) lime
- 88.** Brass has which of the following compositions?
- 1) 40% copper, 40% zinc and 20% tin 2) 50% zinc and 50% copper
3) 80% zinc, 10% copper and 10% lead 4) 80% copper and 20% zinc
- 89.** Broneze has which of the following compositions?
- 1) 50% copper, 10% iron and 40% zinc 2) 90% copper and 10% tin
3) 10% copper and 90% tin 4) 40% copper, 40% tin and 20% zinc
- 90.** Solder has which of the follwing compositions?
- 1) 50% lead and 50% tin 2) 70% lead, 20% copper and 10% tin
3) 20% lead, 40% copper and 40% tin 4) 10% lead and 90% tin
- 91.** Galvansation is the process of-
- 1) Drawing metals into thin wires
2) Giving a coating of zinc metal on iron
3) Making aluminium metal into thin wire
4) Making thin aluminium foils
- 92.** German silver has which of the following compositions?
- 1) 20% copper, 20% chromium and 60% zinc
2) 40% copper, 20% zinc and 40% silver
3) 60% copper, 20% zinc and 20% nickel
4) 80% copper, 10% zinc and 10% silver
- 93.** The symbol of Magnesium is Mg. What does Mg^{2+} mean?
- 1) Magnesium atom has acquired two protons
2) two atoms of magnesium have combined
3) Magnesium atom has donated two outermost electrons to form a positive ion
4) The charged Mg. ion attracts oppositely charged negative ions with twice as much intensity

- 94.** When Sodium (Na), Copper (Cu) and Zinc (Zn) are placed in the order of decreasing reactivity, then their order would be-
- 1) $\text{Na} > \text{Zn} > \text{Cu}$ 2) $\text{Na} > \text{Cu} > \text{Zn}$ 3) $\text{Cu} > \text{Na} > \text{Zn}$ 4) $\text{Zn} > \text{Na} > \text{Cu}$
- 95.** Which of the following metals is more reactive than Hydrogen?
- 1) Gold 2) Calcium 3) Aluminium 4) Iron
- 96.** Which of the following metals can displace Hydrogen from its compounds like water and acids to form hydrogen gas?
- 1) Tin 2) Copper 3) Mercury 4) Silver
- 97.** The approximate percentage of salt by weight in sea water is-
- 1) 41% 2) 3.6% 3) 0.1% 4) 10.2%
- 98.** The common salt is iodised to prevent occurrence of which of the following diseases in the human body?
- 1) Diabetes 2) Goitre
3) Beri-beri 4) Night-blindness
- 99.** A wire of a certain length has a resistance of 2.2Ω . If the wire is stretched to twice its original length, then find the new resistance.
- 1) 8.8Ω 2) 1.1Ω 3) 2.2Ω 4) 4.4Ω
- 100.** In the above circuit, the effective resistance between the points A and B is-
- 
- 1) 18Ω 2) $4\frac{4}{9}\Omega$ 3) $6\frac{1}{3}\Omega$ 4) $3\frac{1}{3}\Omega$

ANSWERS

1-4; 2-4; 3-1; 4-3; 5-1; 6-2; 7-2; 8-1; 9-1; 10-4; 11-1; 12-3; 13-4; 14-4; 15-4; 16-3; 17-3; 18-2; 19-4; 20-3; 21-3; 22-3; 23-4; 24-2; 25-3; 26-3; 27-1; 28-3; 29-2; 30-3; 31-3; 32-3; 33-1; 34-3; 35-2; 36-4; 37-1; 38-3; 39-3; 40-1; 41-1; 42-3; 43-4; 44-3; 45-4; 46-3; 47-1; 48-1; 49-4; 50-2; 51-2; 52-4; 53-4; 54-2; 55-1; 56-4; 57-4; 58-3; 59-1; 60-1; 61-4; 62-1; 63-1; 64-1; 65-2; 66-1; 67-1; 68-1; 69-1; 70-1; 71-4; 72-3; 73-2; 74-4; 75-2; 76-4; 77-3; 78-3; 79-1; 80-4; 81-4; 82-1; 83-2; 84-3; 85-4; 86-2; 87-1; 88-4; 89-2; 90-1; 91-2; 92-3; 93-3; 94-1; 95-2; 96-1; 97-2; 98-2; 99-1; 100-3.

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PREVIOUS
PAPER

Assistant Loco Pilot Ranchi Based on Memory

1. What is the value of knee voltage of silicon diode?
1) 0.3 V 2) 0.33 V 3) 0.7 V 4) 1.1 V
2. Which organisation has proposed first to constitute the Constitution Assembly to form the Indian Constitution?
1) Swaraj Party in 1928 2) Indian National Congress in 1936
3) Muslim League in 1942 4) By all parties convention in 1946
3. There is 20 volt across the inductor and 15 volt across the resistance in the a.c. supplied series R-L circuit. What would be the supply voltage?
1) 20 volt 2) 15 volt 3) 25 volt 4) 17.5 volt
4. A transformer mainly transforms
1) Current 2) Voltage 3) Frequency 4) Power
5. What is the power factor of a pure resistor circuit?
1) One 2) Zero 3) Leading 4) Lagging
6. Functions of N.S.D.L. are related to-
1) Bearer bonds 2) GDRs 3) Electronic share 4) Debenture
7. There are rings around which of the following planets?
1) Uranus 2) mars 3) Jupiter 4) Saturn
8. is used to heat the non-conductors.
1) Eddy current heating 2) Arc heating
3) Induction heating 4) Dielectric heating
9. What is the S.I. Unit of magnetic flux density?
1) Gauss 2) Tesla 3) Oersted 4) Weber

10. Which type of oscillator is most stable in simple circuit?
- 1) Crystalline oscillator
 - 2) Clapp oscillator
 - 3) Colpitts oscillator
 - 4) Armstrong oscillator
11. Where is the headquarters of Geological Survey of India located?
- 1) Patna
 - 2) Dehradun
 - 3) Kolkata
 - 4) Agra
12. What is the proper use of signal generator?
- 1) Designing
 - 2) Testing
 - 3) Repairing
 - 4) All the above
13. Nasik is situated on the bank of which river?
- a) Godavari
 - 2) Narmada
 - 3) Tapti
 - 4) Shipra
14. Who started the Shaka era?
- 1) Ashoka
 - 2) Chandragupta-II
 - 3) Kanishka
 - 4) Harsha
15. If one cylinder of a diesel engine receives more fuel than the others, then for that cylinder the
- 1) exhaust till be smoky
 - 2) piston rings would stick into piston grooves
 - 3) scavenging occurs
 - 4) engine starts overheating
16. The information is sent by CW transmitter by-
- 1) Changing the audio frequency
 - 2) Interrupting radio signal
 - 3) Using microphone
 - 4) Using camera
17. Moisture can be removed from lubricating oil using
- 1) Tubular centrifugal
 - 2) Clarifier
 - 3) Sparkler filter
 - 4) Vacuum leaf filter
18. The rank of the following matrix is-
- $$\begin{bmatrix} 1 & 1 & 0 \\ 1 & 1 & 0 \\ 1 & 1 & 0 \end{bmatrix}$$
- 1) 0
 - 2) 1
 - 3) 2
 - 4) 3
19. Germanium possesses-
- 1) Two valence electrons
 - 2) Three valence electrons
 - 3) Four valence electrons
 - 4) Five valence electrons

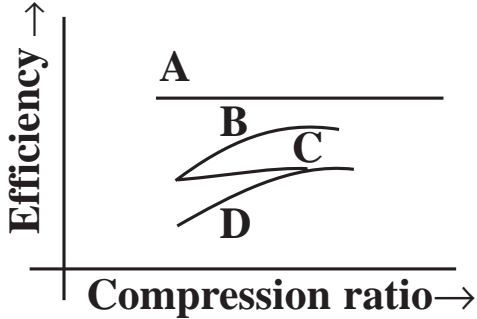
20. Share of export from India is the maximum to the following country-
- 1) U.S.A.
 - 2) U.K.
 - 3) U.A.E.
 - 4) Japan
21. Which of the following is not a property of difference amplifier?
- 1) Capacitor is used in it
 - 2) It is used to compare two signals
 - 3) Difference amplifier yields more than the direct couple amplifier
 - 4) Frequency of difference amplifier remains flat from zero to high frequency
22. Where are the caves of Ajanta located?
- 1) Orissa
 - 2) Kerala
 - 3) Maharashtra
 - 4) Madhya Pradesh
23. Calorie value is the least of the following materials-
- 1) Coal gas
 - 2) Producer gas
 - 3) Steam fiery gas
 - 4) Oil gas
24. The value of $\int \frac{x}{\cos^2 x}$ is equal to which of the following?
- 1) $x \tan x$
 - 2) $\log \cos x$
 - 3) $x \tan x + \log \cos t$
 - 4) $x \tan x - \log \cos x$
25. The colonial system of the company was formalized by-
- 1) Battle of Plassey
 - 2) Battle of Buxar
 - 3) Battle of Panipat
 - 4) Battle of Wandiwash
26. Natural rubber is polymer of-
- 1) Isobutane
 - 2) Isoprene
 - 3) Propane
 - 4) Isopropene
27. For generating large currents on D.C. generators which winding is generally preferred?
- 1) Progressive wave winding
 - 2) Lap winding
 - 3) Retrogressive wave winding
 - 4) Current depends on design
28. A.C. servomotor is basically a/an
- 1) Universal motor
 - 2) Single phase induction motor
 - 3) Two phase induction motor
 - 4) Three phase induction motor
29. co-efficient of velocity as compared to the coefficient of discharge is-
- 1) Less
 - 2) More
 - 3) Equal
 - 4) Less or more depending on flow

30. The capacitance, in force-current analogy, is analogous to-
- 1) Momentum
 - 2) Velocity
 - 3) Displacement
 - 4) Mass
31. signal will become zero when the feedback signal and reference signs are equal.
- 1) Input
 - 2) Actuating
 - 3) Feedback
 - 4) Reference
32. Most of the weather phenomena take place in the-
- 1) Stratosphere
 - 2) Troposphere
 - 3) Tropopause
 - 4) Ionosphere
33. Motor-generator set for D.C. arc welding has generator of-
- 1) Series type
 - 2) Shunt type
 - 3) Differentially compound type
 - 4) Level compound type
34. Which of the following motors is preferred when quick speed reversal is the main consideration?
- 1) Squirrel cage induction motor
 - 2) Wound rotor induction motor
 - 3) Synchronous motor
 - 4) D.C. motor
35. In case of ball bearings, which part is made harder than others-
- 1) Ball
 - 2) Outer-race
 - 3) Inner race
 - 4) All are made equally hard
36. Selectivity of the receiver can be increased by which of the following?
- 1) By using more tuned circuit
 - 2) By decreasing number of tuned circuit
 - 3) By using loudspeaker
 - 4) By increasing gain of the receiver
37. An electronics circuit in which different components such as Diode, Resistor and Capacitor etc. are connected separately is called-
- 1) Chassis
 - 2) Printed board
 - 3) Integrated circuit
 - 4) Discrete circuit
38. Indicated power of a 4-stroke engine is equal to-
- 1) $pLAN$
 - 2) $2pLAN$
 - 3) $\frac{pLAN}{2}$
 - 4) $4pLAN$

where p = Mean effective pressure, L = Stroke, A = Area of piston and N = rpm of engine

- 39.** What are Ferrites?
- 1) Magnetic but have low resistance
 - 2) Magnetic but have high resistance
 - 3) Non-magnetic with low resistance
 - 4) Non-magnetic with high resistance
- 40.** The translator program that converts source code in high level language into machine code line by line is called-
- 1) Assembler
 - 2) Compiler
 - 3) Loader
 - 4) Interpreter
- 41.** National Library, the largest in India is located at-
- 1) Chennai
 - 2) Mumbai
 - 3) Delhi
 - 4) Kolkata
- 42.** Pak Strait joins which of the following two countries-
- 1) India-Pakistan
 - 2) India-Myanmar
 - 3) India-Sri lanka
 - 4) None of these
- 43.** Who had appointed the first Prime Minister of India?
- 1) Lord Mountbatten
 - 2) C.Rajagopalachari
 - 3) President of India
 - 4) None of these
- 44.** Who had demarcated the border-line between India and Pakistan?
- 1) McMohan
 - 2) Lord Durand
 - 3) Radcliffe
 - 4) None of these
- 45.** Approximate thermal efficiency of petrol engine is-
- 1) 20%
 - 2) 30%
 - 3) 50%
 - 4) 75%
- 46.** Which of the following is the universal gate?
- 1) NAND-Gate
 - 2) OR-Gate
 - 3) AND-Gate
 - 4) NOT-Gate
- 47.** How will a red flower appear, if it is seen through a green glass?
- 1) Red
 - 2) Brown
 - 3) White
 - 4) Green
- 48.** What is the unit of electrical energy?
- 1) Ampere
 - 2) volt
 - 3) Watt
 - 4) Kilowatt-hour
- 49.** A diode
- 1) Functions only in one direction
 - 2) Functions in both the directions
 - 3) Does not function at all
 - 4) It gets damaged, when voltage is applied
- 50.** What is the frequency of the receiver?
- 1) 488 kHz
 - 2) 445 kHz
 - 3) 455 kHz
 - 4) 456 kHz
- 51.** When were the Indian States organised on the basis of language?
- 1) 1947
 - 2) 1950
 - 3) 1956
 - 4) 1952

- 52.** What would be the expenditure in 30 days at the rate of 50 paise per unit, if a bulb of 100 W is used five hours per day?
- 1) Rs.10.50 2) Rs.8.50 3) Rs.7.50 4) Rs.9.50
- 53.** Lever functions on which of the following principles?
- 1) Crank-shaft 2) Joining rod 3) Crank pin 4) Cross head
- 54.** Protein is not available in which of the following?
- 1) Meat 2) Milk 3) Rice 4) Pulse
- 55.** In steam turbine the action of steam is-
- 1) Stable 2) Dynamic
3) Stable and dynamic 4) Neither stable nor dynamic
- 56.** Among the following statement which is the false?
- 1) Only minority impurities are added in a junction diode
2) Higher temperature increases the leakage current of diode
3) A simple zener diode works when connected between anode to cathode
4) Zener is mostly used in voltage regulator
- 57.** In resistance heating, highest working temperature is obtained from heating elements made of
- 1) Nickel and copper 2) Nichrome
3) Silicon carbide 4) Silver
- 58.** In higher pair, the relative motion is-
- 1) Purely turning 2) Purely sliding
3) Purely rotary 4) Combination of sliding and turning
- 59.** The least populated State in India is-
- 1) Goa 2) Sikkim
3) Manipur 4) Arunachal Pradesh
- 60.** In case of gas turbines, the gaseous fuel consumption guarantees are based on-
- 1) High heat value 2) Low heat value
3) Net calorific value 4) Middle heat value
- 61.** In a resistive load, power dissipation would be proportional to-
- 1) Current 2) $\frac{1}{\text{Current}}$ 3) $(\text{Current})^2$ 4) $\frac{1}{(\text{Current}^2)}$

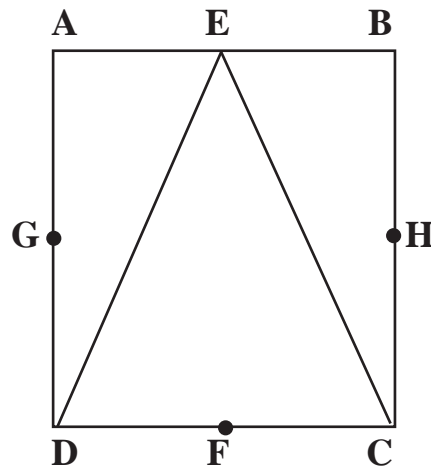
62. An automatic toaster is a loop control system.
- 1) Open
 - 2) Closed
 - 3) Partially closed
 - 4) None of the above
63. A transistor draws a base current of 100 micro ampere when the collector current is 10 milli ampere, what is value of its ' α '?
- 1) $\frac{101}{100}$
 - 2) $\frac{100}{101}$
 - 3) $\frac{1000}{10001}$
 - 4) $\frac{10}{11}$
64. Who of the following was not the acting President of India?
1. V.V.Giri
 - 2) B.D.Jatti
 - 3) Hidayatullah
 - 4) Zakir Hussain
65. The northern most limit of India is-
- 1) $36^{\circ}4'$ N latitude
 - 2) $37^{\circ}8'$ N latitude
 - 3) $37^{\circ}6'$ N latitude
 - 4) $36^{\circ}12'$ N latitude
66. When the load is above, a synchronous motor is found to be more economical.
- 1) 2 kW
 - 2) 20 kW
 - 3) 50 kW
 - 4) 100 kW
67. The first summit of NAM was held at-
- 1) Cairo
 - 2) Lusaka
 - 3) Belgrade
 - 4) New Delhi
68. To convert moving coil galvanometer into an ammeter, which of the following methods is used?
- 1) Small resistance in series
 - 2) Small resistance in parallel
 - 3) High resistance in series
 - 4) High resistance in parallel
69. Following figure shows the curves of efficiency versus compression ratio for various cycles in I.C.engines. For constant volume cycle, the curve applicable is-
- 
- 1) A
 - 2) B
 - 3) C
 - 4) D
70. The minimum value of the function $y = x^5 - 4x^4 + 5x^3 - 1$ will occur when the value of x is equal to-
- 1) 0
 - 2) 1
 - 3) 2
 - 4) 3

- 71.** Which one of the natural regions is known as the 'Bread Basket' of the world?
- 1) The steppe region
 - 2) The mediterranean region
 - 3) The monsoon region
 - 4) The equatorial region
- 72.** When input signal in transistor amplifier is applied between base and emitter and out put is taken from emitter and collector, then what the configuration is called?
- 1) Common emitter
 - 2) Common base
 - 3) Common collector
 - 4) None of these
- 73.** Which of the following can be used to control the speed of a D.C. motor?
- 1) Thermistor
 - 2) Thyristor
 - 3) Thyatron
 - 4) Transistor
- 74.** The transient response of a system is mainly due to-
- 1) Inertia forces
 - 2) Internal forces
 - 3) Stored energy
 - 4) Friction
- 75.** Minority carrier in P-type semi-conductor are-
- 1) Free electrons
 - 2) Free holes
 - 3) Holes and electrons both
 - 4) Holes minus electrons
- 76.** Pulley in a belt drive acts as-
- 1) Cylindrical pair
 - 2) Turning pair
 - 3) Rolling pair
 - 4) Sliding pair
- 77.** D.C. shunt relays are made of-
- 1) Few turns of thin wire
 - 2) Few turns of thick wire
 - 3) Many turns of thin wire
 - 4) Many turns of thick wire
- 78.** The movement that came to an abrupt end due to the Chauri-chaura incident was the-
- 1) Wahabi Movement
 - 2) Home rule movement
 - 3) Non-cooperation movement
 - 4) Civil disobedience movement
- 79.** While checked with a multimeter, an open resistor reads-
- 1) Zero
 - 2) Infinite
 - 3) High but within tolerance
 - 4) Low but not zero
- 80.** In amplitude modulation-
- 1) Amplitude of the carrier is kept constant
 - 2) Change occurs in carrier frequency
 - 3) Amplitude is varied according to the instantaneous value of modulating wave
 - 4) None of these

- 81.** Oscillator operates on sub-harmonic frequency because-
- 1) Lower frequency gives better stability
 - 2) It gives linear output
 - 3) Less stages are used
 - 4) More stages are used
- 82.** Hopkinson's test on D.C. machines is conducted at-
- 1) No-load
 - 2) part load
 - 3) Full-load
 - 4) Over load
- 83.** Emitter follower is also called as-
- 1) Common emitter
 - 2) Common base
 - 3) Common collector
 - 4) SCR
- 84.** The example of lower pair is-
- 1) Shaft revolving in a bearing
 - 2) Straight line motion mechanisms
 - 3) Automobile steering gear
 - 4) All of the above
- 85.** Which is true statement among the following?
- 1) Main function of the detector is to suppress the image signal
 - 2) Noise is very low in crystal detector
 - 3) Super-regenerative is less sensitive
 - 4) Diode detector is more sensitive
- 86.** The first governor-General of India under East India Company was-
- 1) Cornwallis
 - 2) Wellesley
 - 3) Warren Hastings
 - 4) Sir John Shore
- 87.** The expression $\int p \, dV$ can be used for obtaining work of-
- 1) Non-flow reversible process
 - 2) Steady flow reversible process
 - 3) Adiabatic irreversible process
 - 4) Throttling process
- 88.** In connection with oscillator, which is FALSE statement?
- 1) Oscillator converts d.c. into a.c.
 - 2) Oscillator is that amplifier which provides its own input
 - 3) All types of oscillator produce sine wave
 - 4) In phase, feedback used in oscillator is also called positive feedback.

89. The index of compression n tends to reach ratio of specific heats γ when-
- 1) flow is uniform and steady
 - 2) process is isentropic
 - 3) process is isothermal
 - 4) process is isentropic and specific heat does not change with temperature
90. Who of the following attended all the three Round Table Conferences?
- 1) B.R. Ambedkar
 - 2) M.M. Malaviya
 - 3) Vallabhbhai Patel
 - 4) None of the above
91. For which of the following substances, the internal energy and enthalpy are the functions of temperature only-
- 1) Any gas
 - 2) Saturated steam
 - 3) Water
 - 4) Perfect gas
92. Frequency multiplier stage of the transmitter operates under-
- 1) Class C
 - 2) Class A
 - 3) Class AB
 - 4) Class B
93. Which of the following is used in the blast furnace as flux?
- 1) Fluorspar
 - 2) Quartzite
 - 3) Limestone
 - 4) Ferro-manganese
94. An air vessel is usually provided at the summit of a syphon in order to-
- 1) Regulate the flow
 - 2) Increase discharge
 - 3) Avoid interruption in flow
 - 4) Increase velocity
95. An exciter for a turbo generator is a-
- 1) Separately excited generator
 - 2) Shunt generator
 - 3) Series generator
 - 4) Compound generator
96. Which of the following instruments is most accurate?
- 1) Vertical caliper
 - 2) Manometric screw gauge
 - 3) Optical projector
 - 4) Mechanical comparator
97. The value of $\lim_{x \rightarrow \infty} \frac{\sin x}{x}$ is equal to-
- 1) 1
 - 2) -1
 - 3) Zero
 - 4) Infinity

98. In the given figure we see a square ABCD and a triangle EDC within it. E, F, G and H are the midpoints of the four sides of the square AB, DC, AD and BC respectively. If these midpoints are joined together with straight lines e.g., E with F and G with H, then how many triangles will the figure have?



- 1) 9 2) 10 3) 11 4) 12
99. Two generators A and B have 6-poles each. Generator A has wave wound armature while generator B has lap wound armature. The ratio of the induced e.m.f. in generator A and B will be
- 1) 2 : 3 2) 3 : 1 3) 3 : 2 4) 1 : 3
100. A frame-structure is nice if the number of its constituents is equal to
- 1) $2n-3$ 2) $n-1$ 3) $2n-1$ 4) $n-2$

ANSWERS

1-3; 2-2; 3-3; 4-2; 5-1; 6-4; 7-4; 8-4; 9-2; 10-1; 11-2; 12-4; 13-1; 14-3; 15-1; 16-1; 17-1; 18-2; 19-3; 20-1; 21-1; 22-3; 23-2; 24-3; 25-2; 26-2; 27-2; 28-3; 29-2; 30-4; 31-2; 32-2; 33-3; 34-4; 35-4; 36-4; 37-3; 38-3; 39-2; 40-2; 41-4; 42-3; 43-1; 44-3; 45-2; 46-1; 47-2; 48-4; 49-1; 50-4; 51-3; 52-3; 53-1; 54-3; 55-2; 56-1; 57-2; 58-4; 59-2; 60-3; 61-3; 62-1; 63-2; 64-4; 65-3; 66-3; 67-3; 68-2; 69-2; 70-1; 71-1; 72-1; 73-2; 74-2; 75-2; 76-1; 77-2; 78-3; 79-2; 80-3; 81-2; 82-3; 83-3; 84-2; 85-4; 86-3; 87-1; 88-3; 89-2; 90-1; 91-4; 92-1; 93-1; 94-1; 95-1; 96-3; 97-3; 98-2; 99-2; 100-1.

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PREVIOUS
PAPER

Assistant Loco Pilot KOLKATA Based on Memory

1. **Manometer is used to measure-**
1) Pressure 2) Gravity 3) Humidity 4) Volume
2. **Calorie is the unit of-**
1) Temperature 2) Heat 3) Power 4) Energy
3. **A stratight rod partially immersed in water seems bent. Its reason is-**
1) Refraction
2) Reflection
3) Different temperature of water levels
4) High pressure of water at the bottom
4. **Which law states that a liquid inside a closed system exerts equal pressure in all directions?**
1) Boyle's law 2) Pascal's law
3) Graham's law 4) Gay - Lussac's law
5. **An electro-magnet is made of-**
1) Soft iron 2) Copper 3) Hard Steel 4) Zinc
6. **Only two elements are in liquid state at room temperature. They are**
1) Bromine, Iodine 2) Hafnium, Mercury
3) Bromine, Mercury 4) None of these
7. **A stone was dropped freely in a river flowing down a bridge. The stone takes 2 seconds in touching the water surface. The height of the bridge is-**
1) 9.8 m 2) 19.6 m 3) 39.2 m 4) Data inadequate
8. **1 micron is equal to-**
1) 0.1 mm 2) 0.01 mm 3) 0.001 mm 4) 0.0001 mm

- _____

- _____

32. The property of a metal which reduces its strength when it is subjected to reversal of stress is called-
- 1) Fatigue 2) Creep 3) Resilience 4) Elasticity
33. Melting point of cast iron (in °C) is in the range of-
- 1) 1150-1300 2) 1800-1900 3) 1450-1600 4) 600-700
34. The buckling loads depend upon-
- 1) slenderness ratio 2) cross-sectional area
3) modulus of elasticity 4) All of the above
35. 'Anvil' is used in the work of-
- 1) Forging 2) Welding 3) Fitting 4) Machining
36. In an electrical circuit resistance is 55 Ohms and current 4 amperes. What is voltage?
- 1) 220V 2) 13.75V 3) 0 4) 110V
37. Bell metal contains Cu and
- 1) Al 2) Sn 3) Zn 4) Ni
38. To produce flat surfaces by a reciprocating type of machine tool is called-
- 1) Lathe 2) Shaper 3) Drill 4) Milling
39. Which is the most elastic material?
- 1) Rubber 2) Timber 3) Plastic 4) Steel
40. Which of the following has the highest Poisson's ratio?
- 1) Steel 2) Copper 3) Aluminium 4) Rubber
41. D.C. Generator works on the basis of-
- 1) Faraday's law of e.m.induction 2) Ohm's law
3) Lenz's law 4) Newton's law
42. When $x = 2$, the value of $\left(0.5 - \frac{1}{x}\right) = ?$
- 1) 1.5 2) -1.5 3) 0.5 4) 0
43. What number has to be added to the terms of 3 : 5 to make the ratio 5 : 6?
- 1) 13 2) 7 3) 12 4) 6
44. Find the value of $\left\{8 - 2 \times \frac{8 - 2}{8 + 2} \times 5\right\}$
- 1) 3 2) 2 3) 6 4) 4

45. The sum of three consecutive numbers is 18; find the sum of the next three consecutive numbers?
 1) 24 2) 30 3) 27 4) 35
46. $\log_5 125 = x$; $x = ?$
 1) 25 2) 3 3) 2 4) 5
47. Find the value of x in $(2^2)^{\frac{1}{3}} \left(2x + \frac{1}{2} \right) = 2^{-5}$
 1) -4 2) $+4$ 3) -2 4) $+2$
48. A two digit number is 7 times the sum of its two digits. The number that is formed by reversing its digits is 18 less than the original number. What is the number?
 1) 52 2) 42 3) 62 4) 27
49. A sum of money becomes Rs. 20,925 in 2 years and Rs. 24,412.50 in 5 years. Find the rate of interest and the sum of money
 1) 8%, Rs.17,560 2) 6.25%, Rs.18,600
 3) 7%, Rs.18,000 4) 6.75%, Rs.17,775
50. Find the sum fraction which becomes $\frac{1}{2}$ when denominator is increased by 4; the same fraction becomes $\frac{1}{8}$ when the numerator is reduced by 5.
 1) $\frac{3}{5}$ 2) $\frac{5}{8}$ 3) $\frac{6}{8}$ 4) $\frac{8}{12}$
51. Lux is the unit of
 1) magnetic flux 2) frequency
 3) sound intensity 4) level of illumination
52. MISTAKE = 9765412, NAKED = 84123 then STAIN = ?
 1) 65478 2) 98175 3) 89483 4) 68194
53. GAMBLE = ICODNG; FLOWER = ?
 1) GMPXFS 2) HNQYGT 3) GMPVDS 4) None of these
54. Ram started from his house and walked 2km North, then 3 km west and finally 6 km south. How far is he from his house?
 1) 5 km 2) 11 km 3) 4 km 4) 7 km
55. Arrange the following words in the order they appear in an English dictionary?
 1. Literature 2. Little 3. Liberty 4. Library
 1) 4, 3, 2, 1 2) 3, 4, 1, 2 3) 2, 1, 3, 4 4) 4, 3, 1, 2

56. Insert the missing numbers-

| | | | |
|----|----|----|----|
| 2 | 6 | ? | ? |
| 54 | 18 | 81 | 27 |

- 1) 3 and 9 2) 5 and 18 3) 6 and 12 4) 3 and 21

57. Which tool is used for chipping?

1. Chisel 2. Drill 3. Pliers 4. Hammer

58. "PICO" means-

- 1) 10^{-15} 2) 10^{-9} 3) 10^{-12} 4) 10^{-6}

59. 1 nanometre = ?

- 1) 10^{-7} m 2) 10^{-8} m 3) 10^{-9} m 4) 10^{-6} m

60. The relation between wave velocity (V), frequency (f) and wave - length (λ) is-

- 1) $V = f\lambda$ 2) $\lambda = Vf$ 3) $f = \frac{\lambda}{V}$ 4) $f = \lambda V$

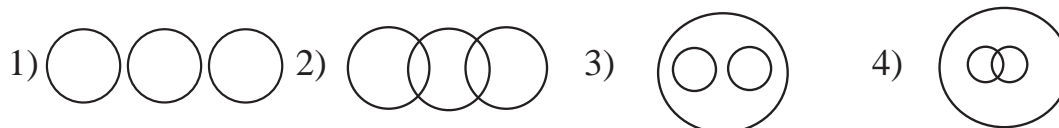
61. 100K = ?

- 1) 170°C 2) -173°C 3) -273°C 4) 273°C

62. At 1.45 PM, the hour hand will be in the direction-

1. North - west 2. South - east 3. West 4. North - east

63. House, bedroom and bathroom are best represented by which venn diagram?



64. If the 26th August in a month is Friday, then the number of Tuesdays in that month will be-

- 1) 4 2) 5 3) 6 4) None of these

65. If the diameter of a sphere is 6 meters, its hemisphere will have a volume of-

- 1) 36π 2) 72π 3) 18π 4) None of these

66. What part of an hour elases from 4.56PM to 5.32 PM?

- 1) $\frac{1}{4}$ 2) $\frac{3}{4}$ 3) $\frac{3}{5}$ 4) $\frac{1}{2}$

67. "Newton's Disk" when rotated rapidly appears

- 1) Yellow 2) White 3) Black 4) Green

68. Red Hematite is the ore of

- 1) Copper 2) Zinc 3) Aluminium 4) Iron

69. Specific Latent heat of vapourization of water is-

- 1) 540 calories/ gm 2) 80 calories/ gm
3) 540 k.calories/ gm² 4) 80 k.calories/ gm²

70. What percent of CO² by volume constitutes the atmosphere?

- 1) 1% 2) 0.03% 3. 0.1% 4) 2%

71. Which Gupta ruler was crowned with the title of Vikramaditya?

- 1) Chandragupta-I 2) Chandragupta-II
3) Skundgupta 4) Samudragupta

72. The father of Rabindrabhanath Tagore was-

- 1) Ratindranath 2) Dwarkanath
3) Avanindranath 4) Devendranath

73. Which of the following filmstars was lovingly called “Dadamuni”?

- 1) Sanjeev Kumar 2) Asit sen
3) Ashok Kumar 4) Kishore Kumar

74. The unit to measure the speed of ships is-

- 1) mile 2) kmph 3) knot 4) mph

75. National Defence Academy is situated in-

- 1) Dehradun 2) New Delhi
3) Kharagwasala 4) Nasik

76. Dhanpat Rai is popularly known as-

1. Nirala 2. Hari Audh 3. Bachchan 4. Premchand

77. The Khajuraho temples are situated in-

- 1) Madya pradesh 2) Uttar Pradesh
3) Rajasthan 4) Bihar

78. The famous “Gateway of India” is situated in

- 1) Mumbai 2) Agra 3) New Delhi 4) Kolkata

79. Which has pink colour ?

- 1) India Gate 2) Victoria Memorial
3) Hawa Mahal 4) Lotus Temple

80. Hinyana and Mahayana are two sects of

- 1) Sikhism 2) Hinduism 3) Buddhism 4) Jainism

81. Status of Liberty is situated in-

- 1) Spain 2) UK 3) US 4) Italy

82. Who is called Bharatendu?

- 1) Rabindranath 2) Premchand
3) Hrishchandra 4) Bachchan

83. Euro is the currency of

- 1) Germany 2) New Zealand 3) Canada 4) Mexico

84. NaCl is the chemical formula of-

- 1) Urea 2) Salt 3) Baking soda 4) Lime

85. Seismology is the scientific study of

- 1) Earthquake 2) Weather conditions
3) Volcanoes 4) Rocks

86. Who was the last viceroy of India?

- 1) C.Rajgopalachari 2) Lord Wavell
3) Lord Canning 4) Mountbatten

87. Haldiya oil refinery is situated in-

- 1) Bihar 2) Jharkand 3) Orissa 4) W.Bengal

88. Which of the following cities is also called Prayag?

- 1) Lucknow 2) Allahabad 3) Patna 4) Nasik

ANSWERS

1-1; 2-2; 3-1; 4-2; 5-1; 6-3; 7-2; 8-3; 9-1; 10-3; 11-4; 12-2; 13-2; 14-1; 15-1; 16-1; 17-3; 18-2; 19-2; 20-3; 21-3; 22-2; 23-3; 24-1; 25-4; 26-2; 27-2; 28-2; 29-2; 30-3; 31- 1; 32-1; 33-3; 34-4; 35-2; 36-2; 37-2; 38-1; 39-4; 40-1; 41-1; 42-4; 43-2; 44-2; 45-3; 46-2; 47-1; 48-2; 49-2; 50-3; 51-4; 52-1; 53-2; 54-1; 55-2; 56-1; 57-1; 58-3; 59-3; 60-1; 61-2; 62-4; 63-3; 64-2; 65-3; 66-3; 67-2; 68-4; 69-1; 70-2; 71-2; 72-4; 73-3; 74-3; 75-3; 76-4; 77-1; 78-1; 79-3; 80-3; 81-3; 82-3; 83-1; 84-2; 85-1; 86-1; 87-4; 88-2.



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1. अध्यायवार M.C.Q
2. गणित एवं तार्किक क्षमता को हल करने की सरल विधि
3. अभ्यास प्रश्न

आप क्या प्राप्त करेंगे?

- माध्यम: हिन्दी
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R.R.B.

PREVIOUS
PAPER

Assistant Loco Pilot Allahabad Based on Memory

1. The cost price of an article was divided among the price of the goods, labour charges and other expenses in the ratio of 3 : 4 : 1. If the cost of the goods is Rs.22.50, what would be the cost of price of the article?
1) Rs.70 2) Rs.80 3) Rs.60 4) Rs.90
2. Monthly salary of Harish is Rs.12,850. After deducting provident fund, he gets Rs.11,822 per month. What is the percentage of the salary that is deducted in the form of provident fund?
1) 8% 2) 8.3% 3) 9% 4) 6%
3. Present age of the son is the half of the present age of the mother. 10 years ago, the mother's age was twice age of the son. What is the present age of the son?
1) 25 years 2) 30 years 3) 40 years 4) 20 years
4. A rectangular hall of $24\text{m} \times 18\text{m}$. Leaving a margin of 1.50m along with the four sides, a carpet is spread of the rate of Rs.23 per square metre. Find out the cost price of the carpet?
1) Rs.7,145 2) Rs.7,245 3) Rs.7,345 4) Rs.7,100
5. A man spends $\frac{1}{4}$ of his income on food, $\frac{1}{5}$ on rent and the rest Rs.231 on other items. Calculate his total income?
1) Rs.420 2) Rs.560 3) Rs.562 4) Rs.400
6. A man swims 1 km in 10 minutes in the direction of current and 1 km in 30 minutes against the direction of the current. What is the speed of the current?
1) 4 km/hr 2) 2 km/hr 3) 6 km/hr 4) 5 km/hr

7. A, B, and C can do some work in 12 days, 15 days and 20 days respectively. They started to do the work jointly, but C left the work after 2 days. In how many days will the rest part of the work be completed?
1) 6 days 2) 5 days 3) 4 days 4) 7 days
8. 2 k g of tea and 3 kg of sugar together costs Rs.39. The price of tea has risen by 25% and that of sugar by 20%. Hence the same quantities of tea and sugar now cost Rs.48.30. Find the original price of tea per kg.
1) Rs.14.90/kg 2) Rs.15.00/kg 3) Rs.16.00/kg 4) Rs.14.40/kg
9. The ratio of acetylene to oxyzen is approximately for a neutral flame used in gas welding-
1) 1 : 1 2) 1 : 2 3) 1 : 3 4) 1 : 0.1
10. Among the conventional machining process maximum specific energy is consumed in-
1) Drilling 2) Planning 3) Grinding 4) Turning
11. The gas used in welding and cutting of metals is -
1) Ethene 2) Ethyne 3) Propane 4) Ethane
12. If steel is heated bright red hot and is then cooled slowly, the process is called-
1) Annealing 2) Tempering 3) Smelting 4) Quenching
13. An alloy of copper and zinc is called as-
1) Bronze 2) Gunmetal 3) Stainless steel 4) Brass
14. Temporary hardness of water is due to the presence of-
1) Magnesium sulphate 2) Calcium hydroxide
3) Calcium Sulphate 4) Calcium bicarbonate
15. Which of the following is not a noble gas?
1) Neon 2) Argon 3) Hydrogen 4) Helium
16. White revolution is related to the increase in production of which of the following?
1) Wood 2) Milk 3) White Meat 4) Egg
17. Which of the following vitamins is soluble in water?
1) E 2) A 3) C 4) K
18. Which of the main constituent of bones and teeth?
1) Calcium 2) Phosphorous 3) Sulphur 4) Iron
19. In blood pressure the highest point or the upper reading is called-
1) Diastolic 2) High tension
3) Extreme tension 4) Systolic

- _____

- _____

43. Under a constant pressure head the rate of flow of liquid through a capillary tube is V . If the length of the capillary is doubled and the diameter of the tube is halved, the rate of flow would become.
- 1) $\frac{V}{4}$ 2) $\frac{V}{8}$ 3) $\frac{V}{32}$ 4) $\frac{16}{V}$
44. The angle of the prism is 60° . The refractive index of the material of the prism is $\sqrt{2}$. A ray is incident at an angle of 45° . The angle made by emergent ray is
- 1) 30° 2) 60° 3) 45° 4) 0°
45. An object is placed in front of a thin convex lens of focal length 30 cm and a plane mirror is placed 15cm behind the lens. If the final image of the object coincides with the object the distance of the object from the lens is-
- 1) 30 cm 2) 25 cm 3) 15 cm 4) 45 cm
46. 64 identical small spherical Hg drops each having energy E , combine to form a large drop. What will be the electrostatic energy of the large drop?
- 1) 512 E 2) 64 E 3) 32 E 4) 1,024 E
47. A satellite of mass m is revolving round the Earth at a height R above the surface of the Earth. If g is the gravitational field intensity at the Earth's surface and R is the radius. The kinetic energy of the satellite is
- 1) mgR 2) $mgR/4$ 3) $mgR/2$ 4) $2mgR$
48. A man travelling at 10.8 kmh^{-1} in a topless car on a rainy day. He holds an umbrella at an angle of 37° to the vertical to protect himself from the rain which is following vertically downwards. What is the velocity of the rain?
- $\left(\text{Given: } \cos 37^\circ = \frac{4}{5} \right)$
- 1) 3 ms^{-1} 2) 5 ms^{-1} 3) $5\sqrt{3} \text{ ms}^{-1}$ 4) $3\sqrt{5} \text{ ms}^{-1}$
49. Munshi Prem chand is the pen name of which Indian literary personality?
- 1) Ajaib Lal 2) Dhanpat Rai 3) Diwakar Rai 4) Dhanpat Lal
50. Ibn Batutaa was an African traveller whose account contains detailed information about the reign of
- 1) Babur 2) Akbar
3) Mahmud of Ghazni 4) Muhammad-bin-Tuglaq

- _____

- 63. Which type of soil retain maximum amount of water?**
1) Black 2) Clayey 3) Red 4) Loam
- 64. What is the tenure of the members of Rajya Sabha?**
1) 5 Years 2) 6 Years 3) 7 Years 4) 4 Years
- 65. President of India is elected indirectly by an electrol college consisting of elected members of-**
1) Lok Sabha
2) Lok Sabha and Rajya Sabha
3) Lok Sabha, Rajya Sabha and state Legislative Assembly
4) People of India
- 66. Football World Cup 2006 will be held at-**
1) Germany 2) France 3) Spain 4) Brazil
- 67. Who is the author of the book titled 'Waiting for Mahatma'?**
1) jai Prakash Narayan 2) R.K.Narayan
3) Vinoba Bhave 4) Sarojini Niaidu
- 68. Indian Naval Academy is located at-**
1) Panjim 2) Visakhapatnam 3) Chennai 4) Cochin
- 69. Who started Home Rule League Movement?**
1) Annie Besant 2) Mahatma Gandhi
3) Pandit J.L.Nehru 4) B.G.Tilak
- 70. Who said "Independence is our birth right we shall have it"**
1) Bal Gangadhar Tilak 2) Bhagat Singh
3) Ram Prasad Bismil 4) Subhash Chandra Bose
- 71. Who is known as 'Punjab Kesari'**
1) Lala Lajpat Rai 2) Udham Singh
3) Bhagat Singh 4) Bal Gangadhar Tilak
- 72. Yuvan is the currency of which country?**
1) China 2) Japan 3) Korea 4) Vietnam
- 73. Which of the following countries is called "The land of Morning Calm"?**
1) Korea 2) Taiwan 3) China 4) Japan

- 74. 1 Megabyte is equal to bytes**
1) 10,48,576 2) 1,00,00,000 3) 1.03,40,000 4) 1,024
- 75. Find out the missing term**
APOC : ? : : ITSK : MVUN
1) EQRH 2) DQRH 3) ERQF 4) DRQF
- 76. Which of the following is the classical dance of Andhra Pradesh?**
1) Kuchipudi 2) Kathakali 3) Kathak 4) Bhratanatyam
- 77. Which computer programming language uses letters, instead of digits to express the instructions?**
1) Functional Language 2) Imperative Language
3) List Processing 4) Assembly Language
- 78. Find out the missing term**
2, 3, 5, 7, ?, 13, 17
1) 15 2) 17 3) 19 4) 11
- 79. Find out the missing term**
2, 2, 4, 6, ?, 10, 8, 14, 10, 18, 12
1) 6 2) 7 3) 8 4) 5
- 80. Find out the missing term**
BCDE : VWXY : : ? : QRST
1) HIJK 2) GHIJ 3) MNOP 4) CDEF
- 81. Head quarters of which of the following U.N. agencies is located in Paris?**
1) UNESCO 2) UNICEF 3) UNO 4) None of these
- 82. In the series 196, 169, 144, 121, 80. Which number is wrong?**
1) 121 2) 196 3) 169 4) 80
- 83. In a code language if FHQK means GIRL, how can WOMEN be written in the same code language?**
1) FHQKN 2) XPNFO 3) VLNDM 4) VNLDM
- 84. If code number of SHARP is 58034 and that of PUSH is 4658, what should be the code number of RUSH?**
1) 3568 2) 3658 3) 3583 4) 3685

85. In English alphabet, a letter is located at 5th place from left and the second letter is located at 12th place towards right from this 5th place letter. What is the second letter?
- 1) Q 2) R 3) S 4) P
86. If GOLFER is coded as HNMEFQ then HUNGER will be coded is-
- 1) IVOHFS 2) ITODFQ 3) TIDOQF 4) ITOFFQ
87. If GO = 32, SHE = 42, then SOME will be equal to-
- 1) 60 2) 62 3) 64 4) 58
88. Find the missing term-
- | | | |
|----|----|----|
| 17 | 15 | 8 |
| 99 | 95 | 64 |
| 36 | 45 | ? |
- 1) -129 2) 729 3) 1331 4) -343
89. A speaks truth in 60% cases and B speaks truth in 70% cases. The probability that they will say the same thing while describing single event is-
- 1) 0.56 2) 0.68 3) 0.94 4) 0.54
90. Three different dice are rolled three times. The probability that they show different numbers only two times is
- 1) $\frac{107}{54}$ 2) $\frac{5}{9}$ 3) $\frac{100}{243}$ 4) $\frac{1}{3}$
91. In how many ways can we distribute 5 different balls in 4 different boxes when order is not consider inside the boxes and empty boxes are not allowed?
- 1) 150 2) 240 3) 280 4) 120
92. The area of the triangle formed by the lines $y = 2x$, $x = 0$, $y = 2$ is-
- 1) $1/2$ sq unit 2) 2sq unit 3) 3sq unit 4) 1sq unit
93. If a, b, c, are in A.P then the straight line $ax + by + c = 0$ will always pass through a fixed point whose coordinates are-
- 1) (1, -2) 2) (1, 2) 3) (-1, -2) 4) (-1, 2)
94. The maximum number of points of intersection of 8 circles is-
- 1) 52 2) 48 3) 42 4) 56

95. If a, b, c , are H.P. then $4^{-a}, 4^{-b}, 4^{-c}$ are-
- 1) G.P. 2) H.P. 3) A.P. 4) None of these
96. A man running round a race course notes that the sum of the distance of two flag posts from him is always 10 meters and the distance between the flag post is 8 metres. The area of the path he encloses in square metres is-
- 1) 12π 2) 15π 3) 18π 4) 9π
97. A stone thrown vertically upwards rises 's' metres in t seconds, where $s = 80t - 16t^2$, then the velocity after 2 seconds
- 1) 24m/ sec 2) 32m/ sec 3) 64m/ sec 4) 16m/ sec
98. In off season, after reduction of 12% the cost of a blanket comes down to Rs.748. What was its original cost?
- 1) Rs.820 2) Rs.840 3) Rs.850 4) Rs.815
99. In an examination minimum marks for first division is 60%. Ayush obtain 447 marks which are 3 marks less than the first division minimum marks. What are the maximum marks in the examination?
- 1) 720 2) 750 3) 780 4) 600
100. A shopkeeper buys a watch for Rs.400. He marks 25% more on the watch than the cost price. He allows 12% discount at the marked price. What is the percentage of profit?
- 1) 11% 2) 13% 3) 15% 4) 10%

ANSWERS

1-3; 2-1; 3-4; 4-2; 5-1; 6-2; 7-3; 8-2; 9-3; 10-2; 11-2; 12-1; 13-4; 14-4; 15-3; 16-2; 17-3; 18-1; 19-4; 20-3; 21-2; 22-4; 23-3; 24-1; 25-4; 26-4; 27-2; 28-2; 29-1; 30-1; 31-3; 32-4; 33-3; 34-4; 35-3; 36-1; 37-3; 38-4; 39-4; 40-1; 41-2; 42-4; 43-3; 44-3; 45-1; 46-4; 47-3; 48-2; 49-2; 50-4; 51-1; 52-3; 53-2; 54-4; 55-2; 56-1; 57-4; 58-2; 59-4; 60-2; 61-1; 62-3; 63-2; 64-2; 65-3; 66-1; 67-2; 68-4; 69-4; 70-1; 71-1; 72-1; 73-1; 74-1; 75-3; 76-1; 77-4; 78-4; 79-1; 80-2; 81-1; 82-4; 83-2; 84-2; 85-1; 86-4; 87-2; 88-1; 89-4; 90-2; 91-4; 92-4; 93-1; 94-4; 95-3; 96-2; 97-4; 98-3; 99-2; 100-4.

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RAILWAY RECRUITMENT BOARD
ALLAHABAD
ASSISTANT LOCO PILOT
(PREVIOUS PAPER 2010)
BASED ON MEMORY

Time: $2\frac{1}{2}$ Hours

Max.Marks: 50

Directions (1 - 8): In each of the following sentences, four words have been printed in BOLD which are numbered as 1, 2, 3 and 4. One of these words may be mis-spelt or inappropriate in the context of the sentence. Find out the wrongly-spelt or inappropriate word. The number of that word is the answer. If all the words are correctly spelt and are appropriate, the answer is (4) i.e. All correct.

1. Napoleon is universally (1) / acknowledged (2) / to have been one of the great (3) / of generals. All correct. (4)
2. He have (1) / risen to eminence (2) / from poverty (3) / and obscurity. All correct (4).
3. The king allowed (1) / no cows to be slaughtered (2) / in his territory (3) / All correct. (4).
4. She is anxious (1) / to releave (2) them of their sufferings (3) / All correct (4)
5. His finished (1) / manners (2) / produced a very favourable impression (3). All correct. (4).
6. Education is the best (1) / pressing (2) / need of our (3) / country. All correct (4)
7. The policemens (1) / running with all is speed, was scarcely (2) / able to overtake (3) / the thief. All correct (4).
8. Enchanted (1) / with the whole seen (2) / I lingered on my voyage. (3) All correct (4).

Directions (9-13): Fill in the blanks with the appropriate word. Choosing it from the options given.

9. I found it difficult to cope- Mathematics at the advanced level.
1) wit 2) of 3) for 4) up
10. It is natural in every man to wish.... distinction
1) of 2) with 3) for 4) up
11. The goat subsists... the coarsest of food
1) on 2) for 3) in 4) to

12. It was formerly supposed that malaria was due... poisonous exhalations.

- 1) of 2) with 3) for 4) to

13. The celebrated grammarian Patanjali was a contemporary... Pushyamitra Sunga.

- 1) for 2) with 3) of 4) to

Directions (14-16): Critically examine the statement given in bold and answer the questions.

14. **Un easy lies that the head that wears the crown.**

What does this mean?

- 1) The crown worn by the king does not mean that he is a happy man.
- 2) The king wears a crown of gold and gems but his responsibilities make him restless and unhappy.
- 3) People who are rich and powerful are generally restless and worried.
- 4) Those who are in high positions and wealthy are mostly restless because of their responsibilities like kings.

15. **The circumstances of birth are irrelevant. What you do with gift of life determines what you are.**

Which statement best explains this?

- 1) One may be born rich or poor. But how he lives speaks of his real self.
- 2) Misfortunes come even if we are born rich. But success in life depends on our own efforts to live a good life.
- 3) Birth alone does not contribute to success in life. Life is precious and is a free gift of God. We should make it worth living.
- 4) Great qualities are given by God as gifts. We should make good use of them to achieve success in life.

16. **Your mind is like a parachute : It works when it is open.**

What does the statement imply?

- 1) Parachutes are meant for saving lives and you have to open them to do that.
- 2) Open – mindedness is what is essential. We should share with others our joys, sorrows, fears and hopes to make life meaningful.
- 3) We should never close our minds to others. When we share, we become happier and contented.
- 4) Our minds are like parachutes, closed. We must open them to share happiness.

Directions (17-20): Replace the bold portion by choosing the phrase from the given alternatives that best keeps the meaning of the original sentence.

17. The researcher has to mull over his idea for several days.
- 1) To organise his idea for a number of days.
 - 2) To remember his ideas for several days.
 - 3) to scrutinise his ideas for many days.
 - 4) to ponder over his ideas for several days.
18. The function would have been enjoyable. *If all extraneous activities had been dropped from the programme.*
- 1) If all the irrelevant activities had been dropped from the programme.
 - 2) If all the excessive activities had been dropped from the programme.
 - 3) If all over extended activities had been dropped from the programme.
 - 4) If the exceptional activities had been dropped from the programme.
19. The professor wants him *to improve the coherence of his term paper.*
- 1) to increase the distinctiveness of his term paper
 - 2) to improve the consistency of his term paper
 - 3) to improve the rationality of his term paper
 - 4) to enhance the quality of his term paper
20. Researches warn of the *impending extinction of many species of plants and animals.*
- 1) imminent extinction of many species of plants and animals.
 - 2) irrefutable extinction of several species of plants and animals.
 - 3) absolute extinction of species of plants and animals.
 - 4) formidable extinctions of many species of plants and animals.

Directions (21-24): Each of these questions has a sentence that has been scrambled and the scrambled parts have been marked A, B, C, D and E. Find the correct of the parts to reconstruct the sentence.

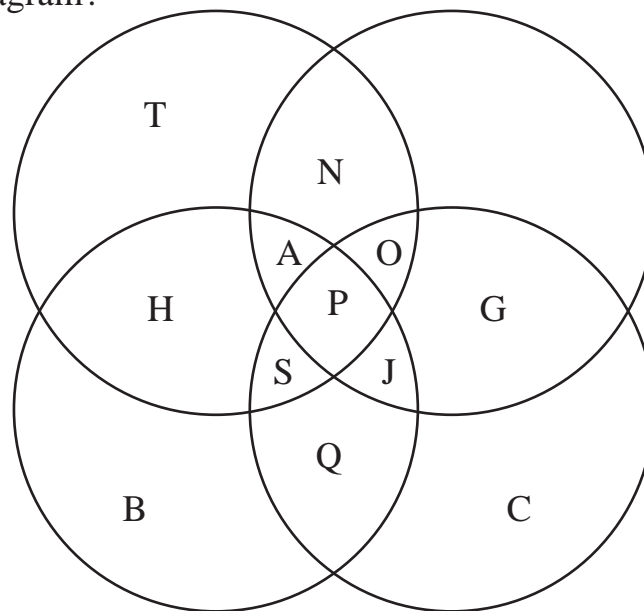
21. A. in different regions of that federation.
B. that was Yugoslavia
C. the fundamental cause has been the very large difference in the quality of life.
D. although the dismemberment of the federation.
E. is seen more as the result of an ethnic conflict.
- 1) D, B, E, C, A. 2) C, E, B, D, A 3) B, C, E, D, A 4) A, B, D, E, C

- 22.** A. but there is some merit in it
B. as distinct from consumption
C. the bifurcation of plan and non-plan funds
D. insofar as it focuses attention on development expenses.
E. in the budget is artificial
- 1) D, C, A, B, E 2) C, D, B, E, A
3) C, E, A, B, D 4) D, E, A, C, B
- 23.** A. Like the industrialised countries
B. As if they are to be suffered as relics of a backward past.
C. We have specially drawn attention to the nonmotorised transport modes
D. Till replaced by faster petroleum fuelled transport.
E. he held in honour
- 1) D, E, A, C, B 2) C, D, E, B, A
3) C, D, A, D, E 4) C, D, B, E, A
- 24.** A. he was highly sensitive and resentful
B. towards the country or to those
C. when there was even implied discourtesy
D. while he was extremely gentle and tolerant
E. he held in honour
- 1) A, C, D, B, E 2) D, A, C, B, E
3) E, A, D, C, B 4) D, C, B, E, A

Directions (25-26): In these questions, select the alternative which has a relation with the four given words.

- 25.** Man, Arm, Preside, Person
- 1) woman 2) chair 3) leader 4) dominate
- 26.** Pigeon, revolution, cage, Leader
- 1) violence 2) captivity 3) coup 4) follower
- 27.** Arrange the following in a meaningful order.
- A. Rain B. Monsoon C. Rescue
- D. Floods E. Shelter F. Relief
- 1) ABDECF 2) ABCDEF 3) BADCEF 4) DABCFE

28. During an interview, there were drivers who knew how to drive cars, some buses and some only tempo vans. The company authority wished to select persons who knew how to drive all the vehicles. How can they select using the letters used in the Venn Diagram?



- 1) P 2) O 3) S 4) N
29. In this question, a statement is given followed by four alternative interferences. Select the one which is the most appropriate.

Statement:

Many creative persons become artists

Inferences:

- 1) Some artists are creative persons
 - 2) A high level of creativity is needed to become an artist
 - 3) It is not possible to become an artist without creativity.
 - 4) A creative person will certainly become an artist
30. If '+' means 'division', '-' means 'multiplication', '×' means minus ÷ means 'addition' then $(75 \times 25) \div 2 + 50 - 10 = ?$
- 1) 16.67 2) 12 3) 977.5 4) 20

Directions (31-32): Read the following information to answer these questions.

'P – Q' means 'Q' is daughter of P

'P × Q' means 'P' is mother of 'Q'

'P + Q' means 'P' is father of 'Q'

31. Which of the following would definitely indicate that C is daughter of B?
- 1) $A - B \times C$ 2) $B + C \times A$ 3) $B + C$ 4) None of these

- _____

42. If the length and the breadth of a rectangle are in the ratio 3 : 2 with its perimeter as 20 cm, then the area of the rectangle will be:
1) 24 cm² 2) 48 cm² 3) 72cm² 4) 96 cm²
43. In a hotel, 60% has vegetarian lunch while 30% had non-vegetarian lunch and 15% had both types of lunch, If 96 people were present, how many did not eat either type of lunch?
1) 20 2) 24 3) 26 4) 28
44. The area of the largest circle, that can be drawn inside a rectangle with sides 18cm by 14 cm, is
1) 49cm² 2) 154cm² 3) 378cm 4) 1078cm²
45. If the sides of a triangle are 5 cm, 4 cm and $\sqrt{41}$ cm, then the area then he take the area of triangle is
1) 20cm² 2) $(5 + 4 + \sqrt{41})$ cm²
3) $\frac{5 + 4 + \sqrt{41}}{3}$ cm^{2/3} 4) 10 cm²
46. $(8 \div 88) \times 8888088$ is equal to
1) 808008 2) 808088 3) 808080 4) 8008008
47. If A : B = 2 : 3 and B : C = 4 : 5, then A : B : C is
1) 2:12:5 2) 8:12:15 3) 12:8:15 4) 15:12:8
48. A clock strikes once at 1 O' clock twice at 2 O'clock thrice 3 O' clock and so, on. How many times will it strikes in 24 hours?
1) 78 2) 136 3) 156 4) 196
49. In India, the Chief Justice of a High Court is appointed by the
1) Chief Minister of the concerned state
2) Governor of the concerned State
3) Chief Justice of India
4) President of India
50. Who among the following are likely to benefit from inflation in a country?
1) Creditors 2) Debtors 3) Salaried people 4) Wage earners
51. Which of the following statements is true?
1) The Vice-President is elected for a period of six years.
2) For election as Vice-President a person should be the member of Rajya Sabha
3) Electoral college for the election of Vice-President is different from that of the President
4) Council of Ministers is responsible to the President

- 52.** Mule is the hybrid of
- 1) male donkey and female horse
 - 2) male horse and a female donkey
 - 3) male horse and female zebra
 - 4) female horse and male zebra
- 53.** Lunar Eclipse occurs when
- 1) Earth is between the Sun and the Moon.
 - 2) Moon is between the Sun and the Moon
 - 3) Sun is between the Moon and the Earth
 - 4) Earth is at right angle to the direction of the Sun and the Moon
- 54.** How many minutes for each degree of longitude does the local time of any place vary from the Greenwich time?
- 1) 4
 - 2) 6
 - 3) 2
 - 4) 8
- 55.** The basic characteristic of Oligopoly is
- 1) a few sellers, a few buyers
 - 2) a few sellers, many buyers
 - 3) many sellers, one buyer
 - 4) a few sellers, one buyer
- 56.** The headquarters of International Labour Organization is located at
- 1) Geneva
 - 2) Vienna
 - 3) Zurich
 - 4) Paris
- 57.** In sports, the term THIRD EYE is connected with
- 1) Archery
 - 2) Cricket
 - 3) Shooting
 - 4) Billiards
- 58.** Electrification in rural areas can be done better and at cheaper rates through
- 1) coal power
 - 2) biogas
 - 3) nuclear energy
 - 4) solar energy
- 59.** The Upanishads deal with
- 1) social behaviour of man
 - 2) religion of the Hindus
 - 3) ancient Hindu laws
 - 4) All of these
- 60.** Dada Saheb Phalke Award is given to an achiever in the field of
- 1) Cinema
 - 2) Literature
 - 3) Art
 - 4) Journalism
- 61.** The behaviour of a perfect gas, undergoing any change in the variables which control physical properties, is governed by
- 1) pressure exerted by the gas
 - 2) volume occupied by the gas
 - 3) temperature of the gas
 - 4) All of these
- 62.** The amount of heat required to raise the temperature of 1 kg of water through 1° C is called
- 1) Specific heat at constant volume
 - 2) Specific heat at constant pressure
 - 3) Kilocalorie
 - 4) None of these

- 63.** When gas is cooled at constant pressure.
- 1) Its temperature increases but volume decreases
 - 2) Its volume increases but temperature decreases
 - 3) both temperature and volume increase
 - 4) both temperature and volume decrease
- 64.** The actual vacuum in a condenser is equal to:
- 1) barometric pressure + actual pressure
 - 2) barometric pressure – actual pressure
 - 3) gauge pressure + atmospheric pressure
 - 4) gauge pressure – atmospheric pressure
- 65.** Parson's turbine is
- 1) a simple impulse turbine
 - 2) a simple reaction turbine
 - 3) an impulse – reaction turbine
 - 4) None of these
- 66.** Which method can be used for absolute measurement of resistances?
- 1) Ohm's law method
 - 2) Wheat stone bridge method
 - 3) Rayleigh's method
 - 4) Lorentz method
- 67.** Which of the following can have positive or negative charge?
- 1) Electron
 - 2) Iron
 - 3) Hole
 - 4) Neutron
- 68.** Metals approach super conductivity condition
- 1) near absolute zero temperature
 - 2) near critical temperature
 - 3) at triple point
 - 4) under conditions of high temperature and pressure
- 69.** Which of the following relations is incorrect?
- 1) Power factor = $\frac{\text{Real Power}}{\text{Apparent power}}$
 - 2) Power factor = $\frac{\text{KW}}{\text{kVA}}$
 - 3) Power factor = $\frac{\text{Resistance}}{\text{Impedance}}$
 - 4) Power factor = $\frac{\text{Conductance}}{\text{Susceptance}}$
- 70.** What did Madame Curie discover?
- 1) Radioactivity
 - 2) Wireless
 - 3) Aeroplane
 - 4) Radium

- 71.** Which of the two metals are mixed in manufacturing stainless steel?
- 1) Zinc, Chromium
 - 2) Nickel, Chromium
 - 3) Chromium, Iron
 - 4) Nickel, Iron
- 72.** Which gas is evolved during photosynthesis in plants?
- 1) Carbon dioxide
 - 2) Oxygen
 - 3) Nitrogen
 - 4) Hidrogen
- 73.** Why is ozone layer important to mankind?
- 1) It creates a protective covering against ultraviolet rays
 - 2) It remains the temperature of earth
 - 3) It release oxygen in the atmosphere
 - 4) It release Corban Dioxide in the atmosphere
- 74.** The temperature at which the volume of a gas becomes zero is called
- 1) absolute temperature
 - 2) absolute zero temperature
 - 3) absolute scale of temperature
 - 4) None of these
- 75.** For the reversibility of a cycle, there should be
- 1) loss of energy
 - 2) no loss of energy
 - 3) gain of energy
 - 4) no gain of energy
- 76.** The amount of heat generated/kg is known as
- 1) heat energy
 - 2) calorific value
 - 3) lower calorific value
 - 4) higher calorific value
- 77.** A four stroke cycle petrol engine requires for strokes of the piston to complete
- 1) one cycle of operation
 - 2) two cycles of operation
 - 3) four cycles of operation
 - 4) eight cycles of operation
- 78.** The advantage(s) of an economiser is/are
- 1) it increases the efficiency of the boiler plant
 - 2) it reduces the range of temperature between different parts of the boiler
 - 3) it makes for more rapid evaporation
 - 4) All of these
- 79.** The joint in which the number of rivets decreases as we proceed from innermost row to the outermost row, is known as
- 1) chain riveted joint
 - 2) zia zag joint
 - 3) diamond riveted joint
 - 4) double riveted butt joint

- 80.** In case a hinged support the reaction
- 1) acts in a direction perpendicular to the plane on which hinge is supported
 - 2) may be in any direction depending upon the bed
 - 3) reactions are perpendicular to the plane of bottom surface of the structure.
 - 4) None of these
- 81.** Bitumen is a
- 1) natural organic substance
 - 2) synthetic organic substance
 - 3) semi-synthetic organic substance
 - 4) None of these
- 82.** The electron emission method used in vacuum tube is
- 1) thermionic emission
 - 2) low electric field emission
 - 3) high electric field emission
 - 4) None of these
- 83.** Open circuit test on transformers is conducted to measure
- 1) core loss
 - 2) friction loss
 - 3) copper loss
 - 4) None of these
- 84.** As open fuse has a resistance of
- 1) Zero
 - 2) infinity
 - 3) about 100 ohms at room temperature
 - 4) at least 1000 ohms
- 85.** Electrical resistance and heating elements are made from:
- 1) brass
 - 2) copper
 - 3) nichrome
 - 4) gun metal
- 86.** The energy is emitted from a body in tiny packets and not as a continuous stream. This statement is based on:
- 1) Plank's quantum
 - 2) Bohr's theory
 - 3) Balmer theory
 - 4) Photoelectric effect
- 87.** Radiation can be detected by
- 1) ammeter
 - 2) voltmeter
 - 3) electrometer
 - 4) oscillator
- 88.** The point, though which the whole weight of the body acts irrespective of its position is known as
- 1) moment of inertia
 - 2) centre of gravity
 - 3) centre of percussion
 - 4) None of these
- 89.** A machine having an efficiency less than 50% is known as
- 1) reversible machine
 - 2) non-reversible machine
 - 3) neither (1) or (2)
 - 4) ideal machine

90. If the gravitational acceleration at any place is doubled, then the weight of body will be
1) $\frac{g}{2}$ 2) g 3) $2g$ 4) $2g$
91. The unit of acceleration is
1) kgm 2) m/sec 3) m/sec^2 4) rad/sec^2
92. A rubber ball is dropped from a height of 2m. If there is no loss of velocity after rebounding, the ball will rise to a height of
1) 1m 2) 2m 3) 3m 4) 4m
93. One watt is equal to
1) 0.1 joule/sec 2) 1 joule/sec 3) 10 joule/sec 4) 100 joule/sec
94. When the spring of a watch is wound, it will possess
1) strain energy 2) kinetic energy 3) heat energy 4) electrical energy
95. A beam which is fixed at one end and free at the other is called
1) simple supported beam 2) fixed beam
3) overhanging beam 4) cantilever beam
96. According to first law of thermodynamics
1) total internal energy of a system during a process remains constant
2) total energy of a system remains constant
3) work done by a system is equal to the heat transferred by the system
4) internal energy, enthalpy and entropy during a process remain constant
97. The transfer of heat from one place to another may take place by
1) conduction 2) convection 3) radiation 4) any of these
98. The density of fluid varies with the
1) change of temperature 2) change of pressure
3) change of temperature and pressure both 4) None of these
99. Piezometer is used to measure
1) atmospheric pressure 2) very low pressure
3) very high pressure 4) difference in pressure between two points
100. The weight of an object would be minimum when it is placed at
1) north place 2) south place
3) equator 4) centre of the earth

- 101.** The gravitational force of attraction between the sun and earth is balanced by
- 1) centrifugal force
 - 2) centripetal force
 - 3) law of conservation of mass
 - 4) gravitational force
- 102.** The rate of change of momentum is proportional to
- 1) torque impressed
 - 2) force impressed
 - 3) time during which the force is applied
 - 4) change in velocities
- 103.** The energy possessed by a horse running on level road is
- 1) work energy
 - 2) heat energy
 - 3) kinetic energy
 - 4) potential energy
- 104.** The value of acceleration due to gravity for earth is
- 1) greater at poles than at equator
 - 2) greater at equator than at the pole
 - 3) same at both places
 - 4) constant everywhere
- 105.** Within classic limit, the ratio of lateral strain to the linear strain is known as
- 1) modulus of rigidity
 - 2) bulk modulus
 - 3) modulus of elasticity
 - 4) poisson's ratio
- 106.** Power factor of an inductive circular can be improved by connecting a capacitor to it in
- 1) series
 - 2) parallel
 - 3) either series or parallel
 - 4) depends on the value of capacitor
- 107.** For the same load, if the power factor of load is reduced, it will draw.
- 1) more current
 - 2) less current
 - 3) same current but less power
 - 4) less current more power
- 108.** Mica is used in an electric iron because it is a
- 1) bad conductor of heat
 - 2) good conductor of heat
 - 3) good conductor of electricity
 - 4) bad conductor of electricity
- 109.** Name like LOTUS, JAVA, ORACLE refer to which area of activity
- 1) Telecommunication
 - 2) Missile technology
 - 3) Computer hardware
 - 4) None of these
- 110.** Which one of the following is an anti-tank missile?
- 1) Agni
 - 2) Nag
 - 3) Prithvi
 - 4) Trishul
- 111.** At what temperature do both Centigrade and Fahrenheit thermometers show the same reading?
- 1) -20°
 - 2) -40°
 - 3) 42°
 - 4) 0°

- 112.** A sudden fall in barometer reading indicates that the weather will be
 1) turbulent 2) rainy 3) cool 4) None of these
- 113.** Plants take nitrogen in the form of
 1) nitrogen 2) nitrous oxide 3) nitrates 4) nitrogen oxide
- 114.** India's contribution to mathematics includes
 A. Number system B. Zero C. Decimal system
 1) A and B 2) A 3) B and C 4) A, B and C
- 115.** Which gland in human body maintains body temperature?
 1) Pitutary 2) Thyroid 3) Adrenal 4) Hypothalamus
- 116.** The chemical behaviour of an atom is determined by its
 1) Atomic mass. 2) Atomic weight 3) Atomic number 4) None of these
- 117.** If the length and cross sectional area of a wire are doubled, its resistance will
 1) remain unchanged 2) become twice
 3) reduce to one half 4) increase four times
- 118.** The line joining the north and south poles of a magnet is called
 1) Magnetic axis 2) Magnetic Meridian
 3) Magnetic field 4) None of these
- 119.** An electric charge in uniform motion produces
 1) an electric field only 2) a magnetic field only
 3) both electric and magnetic field 4) None of these
- 120.** The velocity of α rays is
 1) 3×10^6 m/s 2) 9×10^8 m/s 3) 10^8 m/s 4) None of these

ANSWERS

1-3; 2- 1; 3- 1; 4- 2; 5- 4; 6- 1; 7- 1; 8- 2; 9- 1; 10- 3; 11- 1; 12- 4; 13- 3; 14- 4;
 15- 2; 16- 2; 17- 4; 18- 1; 19- 2; 20- 1; 21- 1; 22- 3; 23- 4; 24- 2; 25- 2; 26- 4; 27- 3;
 28- 1; 29- 1; 30- 1; 31- 1; 32- 1; 33- 1; 34- 2; 35- 2; 36- 4; 37- 3; 38- 1; 39- 4; 40- 2;
 41- 2; 42- 1; 43- 2; 44- 2; 45- 4; 46- 1; 47- 2; 48- 3; 49- 4; 50- 2; 51- 3; 52- 2; 53- 1;
 54- 1; 55- 2; 56- 1; 57- 3; 58- 4; 59- 4; 60- 1; 61- 4; 62- 3; 63- 4; 64- 2; 65- 3; 66- 1;
 67- 1; 68- 2; 69- 4; 70- 4; 71- 3; 72- 2; 73- 1; 74- 2; 75- 2; 76- 2; 77- 1; 78- 4; 79- 3;
 80- 1; 81- 3; 82- 1; 83- 1; 84- 2; 85- 3; 86- 1; 87- 3; 88- 2; 89- 2; 90- 4; 91- 3; 92- 4;
 93- 2; 94- 1; 95- 4; 96- 3; 97- 4; 98- 3; 99- 4; 100- 4; 101- 2; 102- 2; 103- 3; 104- 1;
 105- 4; 106- 1; 107- 1; 108- 1; 109- 4; 110- 2; 111- 2; 112- 1; 113- 1; 114- 4; 115- 4;
 116- 3; 117- 1; 118- 1; 119- 3; 120- 1.

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PREVIOUS
PAPER

Assistant Loco Pilot KOLKATA Based on Memory

1. P.Gopichand is associate with:
1) Tennis 2) Golf 3) Badminton
4) Hockey 5) Squash
2. $\int e^x \sin \left(x + \frac{\pi}{4} \right) dx =$
1) $\frac{e^x}{\sqrt{2}} \sin x + C$ 2) $\sqrt{2}e^x \sin x + C$
3) $\frac{e^x}{\sqrt{2}} \cos x + C$ 4) $\sqrt{2}e^x \cos x + C$
5) None of these
3. Which oxide of nitrogen is formed when ammonium nitrate is heated?
1) NO 2) NO₂ 3) N₂O
4) N₂O₅ 5) O₂
4. Energy in the sun is produced as a result of:
1) Fusion 2) Combustion
3) Explosion 4) Thermo nuclear Fission
5) Friction
5. Ampere is used to measure:
1) Temperature 2) Current 3) Light 4) Weight
5) None of these
6. If $f(x)$ is a polynomial of degree n and $\Delta f(x) = f(x+h) - f(x)$, then $\Delta^n f(x)$ is a polynomial of degree-
1) n 2) $n-1$ 3) $1-n$
4) 1 5) $n-2$

7. The strongest reducing agent among the following acids is:
- 1) Formic acid
 - 2) Acetic Acid
 - 3) Propionic Acid
 - 4) Chloro Acetic Acid
 - 5) Nitric Acid
8. The amount of heat required to convert 5 gms of ice at -20°C to steam at 100°C is:
- 1) 675 calorie
 - 2) 3775 calorie
 - 3) 3650 calorie
 - 4) 3725 calorie
 - 5) 400 calorie
9. Princess Diana was killed in a car accident in:
- 1) UK
 - 2) Italy
 - 3) France
 - 4) Russia
 - 5) Spain
10. India plays two matches each with west Indies and Australia. In any match probabilities of India getting points 0, 1, 2 are $\frac{9}{20}$, $\frac{1}{20}$ and $\frac{1}{2}$ respectively. Assuming that the outcomes are at least 7 points is:
- 1) $\frac{3}{80}$
 - 2) $\frac{5}{80}$
 - 3) $\frac{7}{80}$
 - 4) $\frac{1}{80}$
 - 5) $\frac{1}{10}$
11. If $\frac{3}{4}$ th quantity of a radio active element decays in one hour, its half life period will be:
- 1) 2 hours
 - 2) $3\frac{1}{2}$ hours
 - 3) $\frac{1}{4}$ hours
 - 4) $\frac{1}{3}$ hours
 - 5) None of the above
12. Bernoulli's theorem is applicable to-
- 1) Flow of liquids
 - 2) Viscosity
 - 3) Surface tension
 - 4) Static fluid pressure
 - 5) elasticity
13. Tulsidas became famous during the reign of-
- 1) Sher shah suri
 - 2) Humayun
 - 3) Shahjahan
 - 4) Akbar
 - 5) Jehangir

14. The co-efficient of correlation between two variables x and y is 0.5, and their co-variance is 16. If the standard deviation of x is 4, then the standard deviation of y is-
- 1) 4 2) 16 3) 64
4) 8 5) 2
15. Amino acids are produced by the hydrolysis of-
- 1) Fat 2) Carbohydrates 3) Proteins
4) Nucleic Acid 5) All of the above
16. The colours of thin film result due to-
- 1) dispersion of light 2) scattering of light
3) polarization of light 4) selective absorption of light
5) interference of light
17. The series 'BDFH' is related to 'JLNP' in the same way as 'RTVX' is related to-
- 1) YZAB 2) STMN 3) ZBDF
4) ZBFD 5) None of these
18. If $\log_5 \left(6 + \frac{2}{x}\right) + \log \frac{1}{5} \left(1 + \frac{x}{10}\right) \leq 1$, then x lies in:
- 1) $(-\infty, 1 - \sqrt{5}) \cup (1 + \sqrt{5}, \infty)$ 2) $(1, 1 + \sqrt{5})$
3) $(1 - \sqrt{5}, 1 + \sqrt{5})$ 4) $(1 - \sqrt{5}, 1)$
5) None of these
19. "The Sphinx" is located in-
- 1) Egypt 2) Iraq 3) China
4) Europe 5) Japan
20. Susceptibility of the air medium is-
- 1) Positive 2) Negative 3) Zero
4) One 5) $\frac{1}{\sqrt{2}}$
21. Which is the missing number in the following series?....., 10, 17, 26, 37
- 1) 06 2) 09 3) 05
4) 08 5) 04
22. Co-Ordinates of points of inflection of the normal curve is-
- 1) $m \pm \sigma$ 2) σ 3) m

- 4) $f(m \pm \sigma)$ 5) None of these

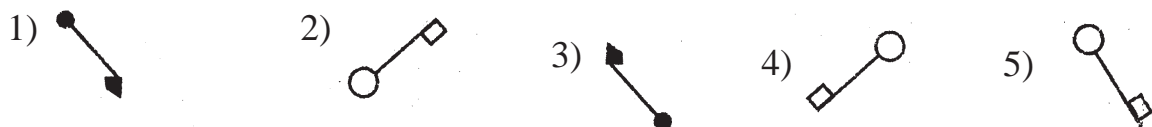
23. The first man to go into space was-

- 1) Neil Armstrong 2) Lyka 3) Yuri Gagarin
4) Edward Aldrin 5) Michael Collins

24. Electrolysis of aqueous solution of sodium succinate gives-

- 1) C_2H_6 2) C_2H_2 3) C_2H_4
4) C_3H_6 5) None of these

25. Pick the odd man out?



26. If n and p are the parameters of a binomial distribution, then its standard deviation is-

- 1) $\frac{1}{n} \sqrt{p(1-p)}$ 2) $\frac{1}{p} \sqrt{n(1-p)}$ 3) $\sqrt{np(1-p)}$
4) $\sqrt{np(1-n)}$ 5) None of these

27. Dr. Christian Barnard performed the first-

- 1) Kidney transplant 2) Liver transplant
3) Heart transplant 4) Pancreas transplant
5) Bone marrow transplant

28. All the radio active changes are-

- 1) Zero order reaction 2) First order reaction
3) Second order reaction 4) Third order reaction
5. Half order reaction

29. Four of the following pairs have a logical relationship. Which one of them does not?

- 1) SHOE : SOCK 2) COAT : SHIRT
3) CAP : TURBAN 4) NEEDLE : THREAD
5) CONTACT LENS : SPECTICLES

30. When two waves of same frequency and same amplitude travelling in opposite directions in a straight line overlaps they give rise to:

- 1) beats 2) interference 3) stationary waves
4) harmonics 5) None of these

31. Niagara Falls is one of the border of-
- 1) France & Germany
 - 2) Nigeria & Congo
 - 3) USA & Canada
 - 4) Nigeria & Kenya
 - 5) USA & Mexico
32. Which of the following electrolyte is least effective in causing coagulation of ferric hydroxide solution?
- 1) KCl
 - 2) K_2SO_4
 - 3) K_2CrO_4
 - 4) $K_3[Fe(CN)_6]$
 - 5) $K_2Cr_2O_7$
33. The atmosphere is held to the earth by:
- 1) Gravity
 - 2) Surface tension
 - 3) Rotation of earth
 - 4) Sun
 - 5) None of these
34. Polarization is a characteristic of-
- 1) light wave
 - 2) sound wave
 - 3) water wave
 - 4) heat wave
 - 5) none of these
35. The number of states in India is-
- 1) 25
 - 2) 26
 - 3) 27
 - 4) 28
 - 5) none of these
36. Oxidation of thiosulphate ion by I_2 gives:
- 1) SO_3^{-2}
 - 2) $S_4O_6^{-2}$
 - 3) SO_4^{-2}
 - 4) $S_2O_8^{-2}$
 - 5) None of these
37. If $x < y$, $y < z$ and $z > w$, then which of the following will always be true?
- 1) $x > w$
 - 2) $y = z$
 - 3) $y > w$
 - 4) $x < z$
 - 5) $x < w$
38. The unit of luminous intensity is:
- 1) lumen
 - 2) lux
 - 3) candela
 - 4) watt
 - 5) light year
39. King Gyanendra is the king of
- 1) Bhutan
 - 2) Nepal
 - 3) Mauritius
 - 4) Fiji
 - 5) Maldives
40. Fehling's solution and Benedict's solution are reduced by glucose to form:
- 1) CuO
 - 2) Cu_2O
 - 3) $CuCO_2$
 - 4) $Cu(OH)_2$
 - 5) None of these

41. If $\cos \alpha$, $\cos \beta$, $\cos \gamma$ be the direction – cosines of a line, then $\sin^2 \alpha + \sin^2 \beta + \sin^2 \gamma =$
- 1) 1 2) 2 3) -1
4) 3 5) None of these
42. Which of the following materials is used for permanent magnets?
- 1) brass 2) copper 3) soft iron
4) steel 5) tungsten
43. The first Governor General of free India was-
- 1) Rajendra Prasad 2) C. Rajagopalachari
3) Lord Mountbatten 4) Padmaja Naidu
5) None of these
44. Which of the following solutions of NaCl has the lowest value of specific conductance-
- 1) 1 M 2) 0.1 M 3) 0.01 M
4) 0.001 M 5) 2 M
45. The probabilities of n independent events are p_1, p_2, \dots, p_n , then the probability that atleast one of the events will happen is:
- 1) $(p_1 - p_2) (p_2 - p_3) \dots (p_{n-1} - p_n)$
2) $(1-p_1) (1-p_2) \dots (1-p_n)$
3) $1-(1-p_1) (1-p_2) (1-p_3) \dots (1-p_n)$
4) $1-p_1 p_2 p_3 \dots p_n$
5) None of these
46. In an electron microscope if the potential is increased from 20 KV to 80 KV, the resolving power 'R' of the microscope will be:
- 1) R 2) 2R 3) 4R
4) $\frac{R}{2}$ 5) $\frac{R}{4}$
47. 'R' is 'S's mother. 'Q' is 'T's mother, 'S' is 'Q's father and 'P' is 'T's sister. How is 'U' related to 'S'?
- 1) Grand father 2) Daughter 3) Grand mother
4) Grand daughter 5) None of these
48. Number of ions present in $K_3 [Fe (CN)_6]$ are:
- 1) 2 2) 5 3) 3
4) 4 5) 9

49. If in a distribution each x is replaced by corresponding value of $f(x)$, then the probability of getting x_i , whose original probability is P_i is-
- 1) P_i 2) $f(P_i)$ 3) $\frac{1}{P_i}f$
4) $1(P_i)$ 5) None of these
50. Band spectrum is produced by-
- 1) $H_{(1)}$ 2) He 3) H_2
4) Na 5) $H_{(g)}$
51. Rahul was born when his father was 32 year older than his brother and his mother was 25 years older than his sister. If Rahul's brother is 6 years older than him and his mother is three years younger than his father, what was Rahul's sister's age, when he was born?
- 1) 10 2) 6 3) 12
4) 14 5) None of these
52. The Capital of Australia is-
- 1) Sydney 2) Melbourne 3) Canberra
4) Brisbane 5) Chicago
53. The angle of elevation of the sun if the length of the shadow of a tower is $\sqrt{3}$ times the height of the tower is-
- 1) 30° 2) 60° 3) 45°
4) 150° 5) 90°
54. A bar magnet is dropped vertically downward through a wire loop held horizontally. The acceleration of the magnet will be:
- 1) g 2) greater than g 3) less than g
4) zero 5) None of these
55. Mohit is ranked 9th from top and 14th from the bottom half of the total number of students in the class. How many students are there in the class?
- 1) 46 2) 23 3) 24
4) 47 5) None of these
56. The world standard time is taken from-
- 1) Florence 2) Kentucky 3) Miami
4) Greenwich 5) Manhattan

57. The degree of the differential equation— $\left[1 + \left\{\frac{dy}{dx}\right\}^2\right]^{\frac{3}{2}} = \frac{d^2y}{dx^2}$ is:

- 1) 1 2) 2 3) 3
4) 4 5) 5

58. Soda ash is-

- 1) Na_2CO_3 2) $\text{Na}_2\text{CO}_3, \text{H}_2\text{O}$ 3) $\text{Na}_2\text{CO}_3 \cdot 7\text{H}_2\text{O}$
4) $\text{Na}_2\text{CO}_3, 10\text{H}_2\text{O}$ 5) None of these

59. Which group does not match in others?

- 1) seed 2) infant 3) interview
bud child posting
flower adult appointment
4) meeting 5) infection
love disease
marriage death

60. The largest ocean in the world is-

- 1) Atlantic Ocean 2) Indian Ocean 3) Pacific Ocean
4) Arctic Ocean 5) Black Sea

61. Value of $\int_0^1 x^2 (1 - x) \frac{3}{2} dx$ is:

- 1) $\frac{16}{315}$ 2) $\frac{16\pi}{315}$ 3) $\frac{32\pi}{315}$
4) $\frac{8\pi}{315}$ 5) $\frac{8}{315}$

62. A strong solution of alcoholic alkali will preferentially promote in alkyl halide:

- 1) Addition 2) Elimination 3) Substitution
4) Ionisation 5) Rearrangement

63. Which is the odd man out?

- 1) CAR 2) AEROPLANE 3) HELICOPTER
4) BUS 5) TRAIN

64. The heroine of the film "Mother India" was-

- 1) Meena Kumari 2) Nargis 3) Madhubala
4) Vijayanthimala 5) Nimmi

65. If $J = \frac{\delta(u, v)}{\delta(x, y)}$ and $J' = \frac{d(u, v)}{d(x, y)}$, then $JJ' =$

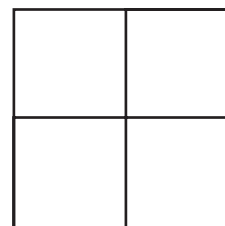
- 1) zero 2) $2J$ 3) $2J'$
4) -1 5) 1

66. 2-pentanol and 3-pentanol can be distinguished by:

- 1) Lucas Test 2) Tollens reagent
3) Iodoform reaction 4) Victor Meyer's Method
5) Benedict's Solution

67. A total of how many squares + rectangles can be seen in the figure below?

- 1) 6 2) 8 3) 9
4) 10 5) None of these



68. Choreography is the art of-

- 1) Canvas painting 2) Creating dance
3) Writing 4) Computer Graphics
5) None of these

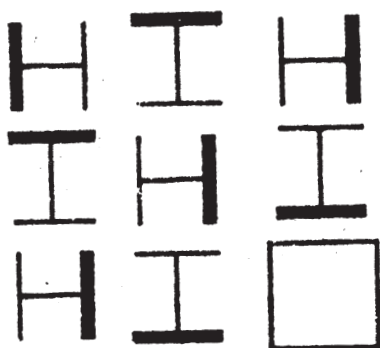
69. Which of the following has the greatest viscosity?

- 1) air 2) hydrogen 3) water
4) mercury 5) helium

70. Which of the following compounds is steam volatile?

- 1) phenol 2) p-nitrophenol 3) m-nitrophenol
4) o-nitrophenol 5) None of these

71. Which of the option fits into the vacant square?



- 1) 2) 3)
4) 5)

72. Hamid Karzai is the President of-

- 1) Turkey 2) Iran 3) Afghanistan
4) Malaysia 5) Saudi Arabia

73. Radioactivity was discovered by-

- 1) Curie 2) Rutherford 3) Bacquerel
4) Roentgen 5) Thomson

74. A rare gas that was detected in the sun before it was discovered on earth is-

- 1) He 2) Ne 3) Ar
4) Kr 5) Xe

75. The plane $\frac{x}{3} + \frac{y}{4} + \frac{z}{5} = 1$ cuts the axes in A, B, C.

The equation of the sphere through A, B, C and the origin is:

- 1) $x^2 + y^2 + z^2 + 3x + 4y + 5z = 0$
2) $x^2 + y^2 + z^2 - 3x - 4y - 5z = 0$
3) $2(x^2 + y^2 + z^2) + 3x + 4y + 5z = 0$
4) $2(x^2 + y^2 + z^2) - 3x - 4y - 5z = 0$
5) None of these

76. Hydrogen was discovered by-

- 1) Priestly 2) Boyle 3) Cavendish
4) Curve 5) Charles

77. Two electric bulbs designed to operate with a power of 500 watts in 220 volt line, are connected in series with a 110 volt line. The power generated by each bulb will be-

- 1) 31.25 watts 2) 3.125 watts 3) 22 watts
4) 62.5 watts 5) 11 watts

78. Natural rubber is a polymer of-

- 1) Styrene 2) Butadiene 3) Isoprene
4) Chloroprene 5) Ethylene

79. If A is a square matrix of order $n \times n$, then $\text{Adj}(\text{Adj} A)$ is equal to:

- 1) $|A|^n A$ 2) $|A|^{n-1} A$ 3) $|A|^{n-2} A$
4) $|A|^{n-3} A$ 5) None of these

80. If 'AMERICA' is coded as 9542739 and 'UNITED' is coded as 017246, INIDICAR can be coded as-

- 1) 7176392 2) 7167932 3) 7157932
4) 9176392 5) 7167392

- 81.** Heat from the sun reaches the earth by means of-
- 1) conduction 2) convection 3) radiation
4) diffusion 5) None of these
- 82.** The percentage of nitrogen in urea is-
- 1) 40 2) 30 3) 46.6
4) 47.8 5) 47.3
- 83.** The probability of getting 53 sundays in a leap year is-
- 1) $1\frac{1}{7}$ 2) $\frac{2}{7}$ 3) $\frac{3}{7}$
4) $\frac{4}{7}$ 5) 1
- 84.** Ram takes 20 minutes to inspect a car, while Robert takes only 18 minutes. If both start inspecting cars at 8.00 hours what is the first time at which both will have finished inspecting a car at the same point of time?
- 1) 09.42 hrs 2) 10.00 hrs 3) 09.30 hrs.
4) 14.00 hrs 5) 11.00 hrs
- 85.** The law $\lambda \propto \frac{1}{T}$ (T = temperature) is known as-
- 1) Raleigh Jean's Law 2) Newton's Law of Cooling
3) Wein's Displacement Law 4) Plack's Law
5) Fresnel's Law
- 86.** The planet in the solar system which is closes to the sun is-
- 1) Mercury 2) Venus 3) Earth
4) Pluto 5) Moon
- 87.** In a town of 10,000 families, it was found that 40% families buy newspaper A, 20% families buy newspaper B and 10% families buy newspaper C, 5% families buy A and B, 3% buy B and C, 4% buy A and C, then the number of families which buy none of A, B, C is-
- 1) 3,300 2) 3,500 3) 4,000
4) 4,200 5) 5,000
- 88.** Insert the missing letter: C 4 K 2 O 3
- 1) W 2) X 3) T
4) U 5) V

89. Which of the following hot bodies of the same material cools last?

- 1) a solid sphere 2) a solid cube 3) a solid cylinder
4) a solid rod 5) a solid cone

90. Kofi Annan is the Secretary General of?

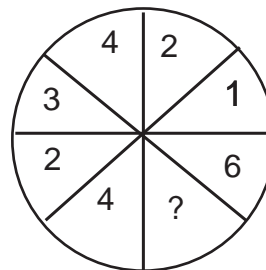
- 1) WHO 2) UNO 3) ILO
4) UNESCO 5) None of these

91. The differential equation of all non-horizontal lines in a plane is:

- 1) $\frac{d^2y}{dx^2} = 0$ 2) $\frac{dx^2}{dy^2} = 0$ 3) $\frac{dy}{dx} = 0$
4) $\frac{dx}{dy} = 0$ 5) None of these

92. Insert the missing number

- 1) 6 2) 8
3) 1 4) 2
5) 4



93. If the earth expands to twice its radius, the duration of a day will become-

- 1) 24 hrs. 2) 48 hrs. 3) 6 hrs.
4) 12 hrs. 5) 96 hrs.

94. Jallianwala Bagh massacre took place in-

- 1) Ambala 2) Jalandhar 3) Amritsar
4) Lahore 5) Panipat

95. If co-efficient of correlation $r = 0$, the two lines of regression are-

- 1) parallel to each other 2) Perpendicular to each other
3) skewed 4) make angle 45° to each other
5) None of these

96. Eight jury members are sitting in a circle. L is sitting between 'I and N', 'M' is to the right of 'I' but to the left of 'K', whose neighbour on the right is 'O'. 'J' has 'P' to his left and 'N' to his right. Which member is sitting diagonally opposite to 'I'?

- 1) M 2) L 3) P
4) O 5) K

97. Which of the following is optically active?

- 1) Formic Acid 2) Propionic Acid 3) Succinic Acid
4) Lactic Acid 5) Meso-tartaric Acid

98. The battle of Plassey was fought between Sirajud-Daulah and:

- | | |
|--------------------|----------------------|
| 1) Warren Hastings | 2) Lord Curzon |
| 3) Robert Clive | 4) Winston Churchill |
| 5) None of these | |

99. Moment of inertia of a thin rod of length 'a' and mass 'm' about an axis passing through an end and perpendicular to the rod is given by-

- | | |
|-------------------------------|----------------------------|
| 1) $MI = \frac{1}{12} ma^2$ | 2) $MI = \frac{1}{4} ma^2$ |
| 3) $MI = \frac{1}{4} m^2 a^2$ | 4) $MI = \frac{1}{3} ma^2$ |
| 5) $MI = \frac{1}{3} m^2 a^2$ | |

100. Pick the odd man out:

- | | | |
|-----------|-----------|----------|
| 1) flower | 2) branch | 3) thorn |
| 4) fruit | 5) leaf | |

101. The atomic number of an element having $4f^1$ electronic configuration in the ground state is-

- | | | |
|-------|-------|-------|
| 1) 54 | 2) 49 | 3) 56 |
| 4) 57 | 5) 58 | |

102. The author of "God of small Things" is:

- | | |
|--------------------|-------------------|
| 1) Salman Rushdie | 2) Arundhati Roy |
| 3) Rohinton Mistry | 4) amit Chowdhury |
| 5) Jhumpa Lahiri | |

103. The ball pen works on the principle of-

- | | |
|---|------------------|
| 1) Viscosity | 2) Gravitational |
| 3) Capillary action and surface tension | 4) Boyle's law |
| 5) Diffusion | |

104. If E is the shift operator and Δ is the forward difference operator then $E - \Delta =$

- | | | |
|-------|-------|------|
| 1) 0 | 2) -1 | 3) 1 |
| 4) -2 | 5) 2 | |

105. The temperature at which real gases obey ideal gas laws over wide range of pressure is called-

- | | |
|-------------------------|--------------------------|
| 1) Critical temperature | 2) Boyle temperature |
| 3) Reduced temperature | 4) Inversion temperature |
| 5) Absolute temperature | |

106. The colours known as primary colours are-

- | | |
|-----------------------|----------------------|
| 1) red, yellow, green | 2) red, blue, green |
| 3) red, black, yellow | 4) red, blue, yellow |
| 5) red, green, black | |

107. Decibel is-

- | | |
|-----------------------------|---------------------------|
| 1) a measure of sound level | 2) wavelength of noise |
| 3) a musical instrument | 4) the frequency of sound |
| 5) a musical note | |

108. If A, B, C are non-singular $n \times n$ matrices, then $(ABC)^{-1} =$

- | | |
|-------------------------|-------------------------|
| 1) $A^{-1}B^{-1}C^{-1}$ | 2) $A^{-1}C^{-1}B^{-1}$ |
| 3) $C^{-1}A^{-1}B^{-1}$ | 4) $B^{-1}C^{-1}A^{-1}$ |
| 5) None of these | |

109. The first man to predict the inter – relationship of matter and energy is:

- | | | |
|---------------|---------------|-----------|
| 1) de Broglie | 2) Bohr | 3) Planck |
| 4) Einstein | 5) Rutherford | |

110. The capital of Uttaranchal is-

- | | | |
|-------------|------------------|------------|
| 1) Nainital | 2) Dehradun | 3) Hardwar |
| 4) Mussouri | 5) None of these | |

111. The resistance of an ideal ammeter is-

- | | | |
|---------|------------------|-------------|
| 1) low | 2) high | 3) infinite |
| 4) zero | 5) None fo these | |

112. For the matrix $A = \begin{bmatrix} 1 & 1 & 0 \\ 1 & 2 & 1 \\ 2 & 1 & 0 \end{bmatrix}$, Which is correct?

- | | | |
|-------------------------|-------------------------|-------------------------|
| 1) $A^3 + 3A^2 - I = 0$ | 2) $A^3 - 3A^2 - I = 0$ | 3) $A^3 + 2A^2 - I = 0$ |
| 4) $A^3 - A^2 + I = 0$ | 5) None of these | |

113. Netaji Subhash Sports Complex is located at-

- 1) Patiala 2) Jalandhar 3) Kolkata
4) Chennai 5) New Delhi

114. 'V' to 'Z' are five houses in a row. 'V' is to the right of 'W'. 'Z' is to the left of 'X' and right of 'V'. 'W' is to the right of 'Y'. Which is the middle house?

- 1) Z 2) X 3) V
4) Y 5) W

115. A liquid drop breaks into number of droplets. Its surface energy?

- 1) increases 2) decreases 3) remains the same
4) becomes zero 5) None of these

116. Dialing a telephone number an old man forgets the last two digits remembering only that these are different and dials them at random. The probability that the number dialed correctly is-

- 1) $\frac{1}{45}$ 2) $\frac{1}{90}$ 3) $\frac{1}{100}$
4) $\frac{2}{45}$ 5) $\frac{1}{50}$

117. The main constituent of Marsh gas is-

- 1) CO 2) CO₂ 3) SO₂
4) CH₄ 5) C₂H₆

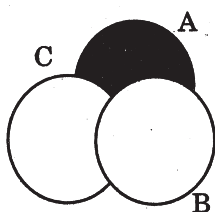
118. 'A' city is 5 km, east of 'B' city. 'C' city is 10 km. Southeast to city 'B'. Which of the following is the closest to the distance from city 'A' to city 'C'?

- 1) 12 km 2) 13 km 3) 14 km
4) 11 km 5) 15 km

119. The voltage gain of a triode depends on-

- 1) filament voltage 2) plate current
3) plate voltage 4) filament current
5) plate resistance

120. The shaded region in the given figure is-

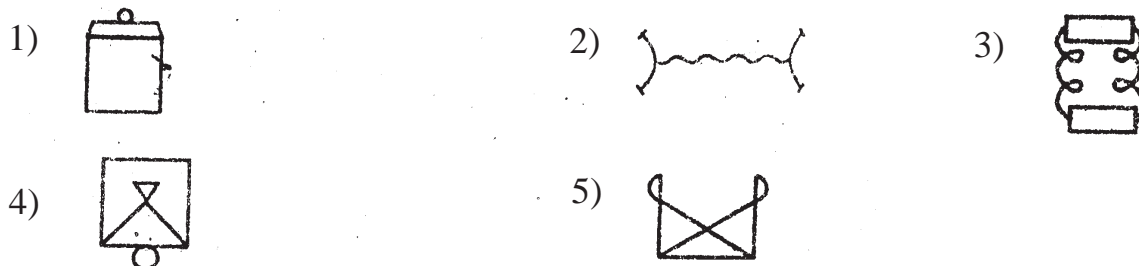


- 1) $A \cap (B \cup C)$ 2) $A \cup (B \cap C)$
3) $A \cap (B \sim C)$ 4) $A \sim (B \cup C)$
5) None of these

121. Catalyst used in Friedel crafts reaction is-

- 1) Na 2) K 3) ZnO
4) MnO_2 5) None of these

122. Pick the odd man out-



123. A geo-stationary satellite revolves round the earth from-

1. East to West 2) North to South 3) South to North
4) West to East 5) North-East to South-West

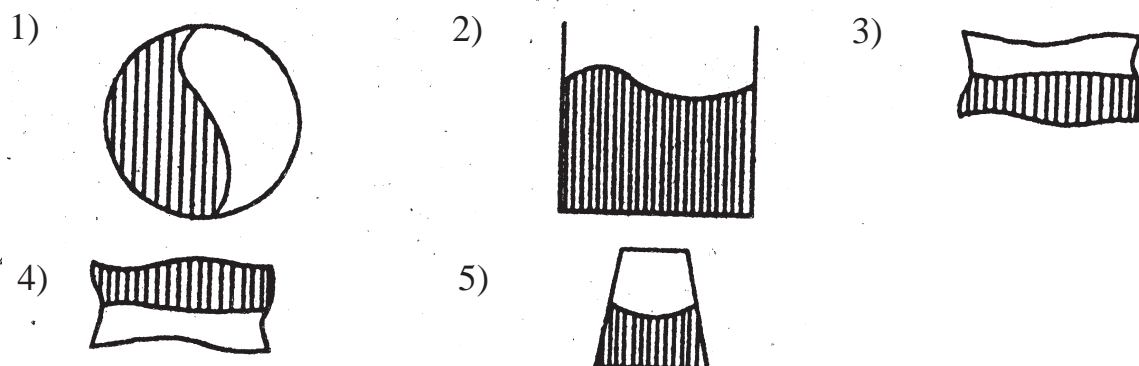
124. If $\frac{dy}{dx} = e - 2y$ and $y = 0$ when $x = 5$, then the value of x when $y = 3$ is:

- 1) e^5 2) $e^6 + 1$ 3) $\frac{e^6 + 9}{2}$
4) $\log_e 6$ 5) None of these

125. The Asian Games, 2002 were held in:

- 1) Japan 2) North Korea 3) South Korea
4) Taiwan 5) China

126. Which of the options below fits into the empty space?



127. Two charged particles separated by a distance 'y' attract each other with a force of 'x'. What will be the attraction if the distance is increased to 5y?

- 1) 25x 2) $\frac{x}{25}$ 3) x+25
4) x-25 5) $\frac{25}{x}$

128. The $(n+1)^{\text{th}}$ and higher order differences of a polynomial of n^{th} degree are:

- 1) n+1 2) n 3) n-1
4) n+2 5) Zero

129. What was the Day of week on 1947 August 15?

- 1) Friday 2) Wednesday 3) Sunday
4) Monday 5) Thursday

130. Which is the odd man out?

- 1) LONDON 2) NEW YORK 3) MUMBAI
4) SYDNEY 5) VENICE

131. Which of the following has no multiple bond?

- 1) HCN 2) N_2H_4 3) C_2H_4
4) CO_2 5) O_2

132. The most appropriate material for a cooking pot is the one having-

- 1) High specific heat and low conductivity
2) High specific heat and high conductivity
3) Low specific heat and low conductivity
4) Low specific heat and high conductivity
5) None of these

133. The first Indian to win the Nobel Prize was-

- 1) C. V. Raman 2) Hargobind Khorana
3) Rabindranath Tagore 4) Amartya Sen
5) Nirad C. Chaudhary

134. Insert the missing number- 8 12 10 16 12 ...

- 1) 18 2) 14 3) 20
4) 24 5) 32

135. An example of an alicyclic compound is-

- 1) Hexane 2) Pyrrole 3) Benzene
4) Cyclohexane 5) Anthracene

136. In a room fitted with green bulb a red cloth will appear to be-

- 1) red 2) yellow 3) orange
4) black 5) blue

137. Heathrow airport is in-

- 1) Paris 2) London 3) New York
4) Chicago 5) Sydney

138. If $f(x, y, z) = 0$ then $\frac{\delta x}{\delta y}, \frac{\delta y}{\delta z}, \frac{\delta z}{\delta x}$ is equal to:

- 1) 0 2) 1 3) -1
4) 2 5) None of these

139. Aqueous solution of CuSO_4 changes blue litmus to red due to-

- 1) Cu^{+2} ions present 2) SO_4^{-2} ions present
3) reduction taking place 4) oxidation taking place
5) hydrolysis taking place

140. X-Ray consist of stream of-

- 1) Protons 2) electrons 3) neutrons
4) photons 5) argons

141. The longest river in the world is-

- 1) Ganga 2) Volga 3) Nile
4) Hwang Ho 5) None of these

142. If the matrix $A = \begin{pmatrix} 1 & 1 \\ 2 & 2 \end{pmatrix}$ and $B = \begin{pmatrix} -1 & 1 \\ 1 & -1 \end{pmatrix}$, then

- 1) $\begin{pmatrix} 1 & 1 \\ 2 & 2 \end{pmatrix}$ 2) $\begin{pmatrix} -1 & 1 \\ 1 & -1 \end{pmatrix}$ 3) $\begin{pmatrix} 1 & 1 \\ 1 & 1 \end{pmatrix}$
4) $\begin{pmatrix} 0 & 0 \\ 0 & 0 \end{pmatrix}$ 5) $\begin{pmatrix} -1 & 1 \\ 2 & -2 \end{pmatrix}$

143. Of the following, an amphoteric hydroxide is-

- 1) $\text{Ca}(\text{OH})_2$ 2) NaOH 3) NH_4OH
4) $\text{Cu}(\text{OH})_2$ 5) $\text{Zn}(\text{OH})_2$

144. The density of water is maximum at-

- 1) 0°C 2) 4°C 3) 0°F
 4) 4°K 5) 273°K

145. Santoor is a-

- 1) Mughlai dish 2) Ornament 3) Musical instrument
 4) Ceremonial dress 5) A fruit

146. A random variable has the following point distribution-

| | | | | | | | | |
|------|---|---|----|----|----|-------|--------|----------|
| x | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| p(x) | 0 | p | 2p | 2p | 3p | p^2 | $2p^2$ | $7p^2+p$ |

- 1) $\frac{1}{10}$ 2) -1 3) $\frac{-1}{10}$
 4) $\frac{3}{10}$ 5) None of these

147. The element which exhibits variable valency is-

- 1) Zinc 2) silicon 3) aluminium
 4) cobalt 5) None of these

148. The value of the absolute zero on the Fahrenheit scale is-

- 1) 273°F 2) -459.4°F 3) 0°F
 4) -1827°F 5) -273°F

149. Photosynthesis is a process related to-

- 1) plants 2) animals
 3) bacteria 4) colour photography
 5) fish

150. A group of 10 items has mean 6. If the mean of 4 of these items is 7.5, then the mean of the remaining items are:

- 1) 6.5 2) 5.5 3) 4.5
 4) 5.0 5) 4.0

151. Aromatic primary amine when treated with cold HNO_2 gives-

- 1) Nitrobenzene 2) Benzyl Alcohol 3) Phenol
 4) Benzene 5) Diazonium Salt

152. The temperature at which the speed of sound in air becomes double of its value at 0°C is-

- 1) 1273°C 2) 546°C 3) 819°C
4) 1546°C 5) 1092°C

153. There are 4 dancers, 4 musicians, 1 actress and 3 singers in a group of 6 women. G and V are among the singers, S and T are among the dancers, while J and S are not singers. P is the actress, J, V, S and T are all musicians and 2 of them are also singers. Who is both a dancer and a singer?

- 1) T 2) S 3) J
4) V 5) G

154. If $a < b$, then-

- 1) $\frac{a+b}{2} < b$ 2) $\frac{a+b}{2} > b$ 3) $\frac{a+b}{2} < a$
4) $\frac{a+b}{2} > a$ 5) None of these

155. Which of the following is used as refrigerant?

- 1) CO_2 2) CHCl_3 3) CF_2Cl_2
4) CH_3Cl_3 5) None of these

156. Lenz's Law is a consequence of the law of conservation of-

- 1) charge 2) momentum 3) mass
4) energy 5) angular momentum

157. What number fills the blanks in the series below? 3, 8, 22, 63, 185,

- 1) 310 2) 295 3) 550
4) 285 5) None of these

158. The angle between the two planes $3x-4y+5z = 0$ and $2x-y-2z = 5$ is-

- 1) $\frac{\pi}{2}$ 2) $\frac{\pi}{3}$ 3) $\frac{\pi}{4}$
4) $\frac{\pi}{6}$ 5) $\frac{2\pi}{3}$

159. The "Wright Brothers" credited with invention of aeroplane were-

- 1) Wilbur & Orville 2) Wilbur & John
3) William & Orville 4) William & John
5) William & Wilbur

160. The number of unpaired electrons in Chromium atom is:

- 1) 7 2) 5 3) 6
4) 4 5) 8

161. Which is the odd man out?



162. If the product of a matrix and its transpose is a unit matrix then the matrix is called-

- 1) symmetric matrix 2) skew symmetric matrix
3) null matrix 4) orthogonal
5) None of these

163. The Capital of Arunachal Pradesh is-

- 1) Agartala 2) Aizawi 3) Itanagar
4) Guwahati 5) Imphal

164. Pure H_2O_2 is-

- 1) Colourless liquid 2) A gas
3) Dark blue syrupy liquid 4) Pale blue syrupy liquid
5) None of these

165. Four out of the five groups of letters below are of the same type. Which is the odd group?

- 1) ADG 2) HKN 3) MOQ
4) ORU 5) JMP

166. In Electroplating that which substance on plating is to take as follow-

- 1) as the anode 2) as the cathode
3) between anode and cathode 4) as the third electrode
5) near the electrolyte

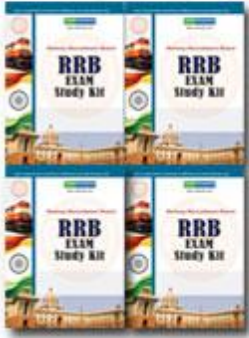
167. "Missionaries of Charity" was founded by-

- 1) Sister Nivedita 2) Annie Besant
3) Mother Teresa 4) Swami Vivekananda
5) Florence Nightingale

ANSWERS

1-3; 2-1; 3-3; 4-1; 5-2; 6- 2; 7 -3; 8- 4; 9- 3; 10- 3; 11- 5; 12- 4; 13- 4; 14- 4; 15 3; 16- 5; 17- 3; 18- 1; 19- 1; 20- 3; 21- 3; 22- 1; 23- 3; 24- 2; 25- 5; 26- 5; 27- 3; 28- 2; 29- 3; 30- 3; 31- 3; 32- 1; 33- 1; 34- 1; 35- 4; 36- 2; 37- 4; 38- 3; 39- 2; 40- 2; 41- 2; 42- 3; 43- 3; 44- 4; 45- 3; 46- 1; 47- 5; 48- 4; 49- 1; 50- 5; 51- 1; 52- 3; 53- 1; 54- 3; 55- 5; 56- 4; 57- 2; 58- 1; 59- 3; 60- 3; 61- 1; 62- 2&3; 63- 5; 64- 2; 65- 1; 66- 3; 67- 5; 68- 2; 69- 4; 70- 2; 71- 2; 72- 3; 73- 3; 74- 1; 75- 2; 76- 3; 77- 4; 78- 3; 79- 3; 80- 5; 81- 3; 82- 3; 83- 2; 84- 5; 85- 3; 86- 1; 87- 4; 88- 3; 89- 1; 90- 2; 91- 1; 92- 2; 93- 3; 94- 3; 95- 2; 96- 3; 97- 4; 98- 3; 99- 4; 100- 3; 101- 5; 102- 2; 103- 3; 104- 3; 105- 3; 106- 2; 107- 1; 108- 5; 109- 1; 110- 2; 111- 1; 112- 2; 113- 1; 114- 3; 115- 1; 116- 2; 117- 4; 118- 4; 119- 3; 120- 4; 121- 5; 122- 2; 123- 4; 124- 3; 125- 3; 126- 1; 127- 2; 128- 5; 129- 1; 130- 3; 131- 5; 132- 4; 133- 3; 134- 3; 135- 4; 136- 4; 137- 2; 138- 1; 139- 1; 140- 4; 141- 3; 142- 4 143- 5; 144- 2; 145- 3; 146- 1; 147- 4 ;148- 3; 149- 1; 150- 4; 151- 5; 152- 3; 153- 1; 154- 1; 155- 3; 156- 4; 157- 3 158- 1; 159- 1; 160- 3; 161- 5; 162- 2; 163- 3 164- 4; 165- 3; 166- 2; 167- 3.

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PREVIOUS
PAPER

Assistant Loco Pilot PATNA - 2013 Based on Memory

1. Which of the following was the capital of 'Kuru' Mahajanapada?
1) Mathura 2) Indraprastha 3) Videha 4) Mithila
2. Out of the following remains excavated in Indus Valley, which one indicates the commercial and economic development?
1) Pottery 2) Seals 3) Boats 4) Houses
3. Which of the following is not an example of literature of Vedic tradition?
1) Vedas 2) Puranas 3) Vedangas 4) Purvas
4. The Indian king who opposed Alexander was-
1) Ambhi 2) Porus
3) Dhananand 4) Mahapadmananda
5. Who laid the foundation of the city Patliputra?
1) Udayan 2) Ashoka
3) Bimbisara 4) Mahapadmananda
6. What was the name of Budha's Charioteer?
1) Manna 2) Channa
3) Devadata 4) Raghu
7. The most famous Kushan ruler was-
1) Rudradaman 2) Vasudeva I
3) Kanishka 4) Ashoka
8. Between which two rulers was the first Battle of Panipat fought?
1) Akbar and Bahlol Lodi 2) Babur and Ibrahim Lodi
3) Bairam Khan and Sikandar Lodi 4) Shahjahan and Daulat Khan Lodi

9. When and where was the 'Ghadar Party' founded?
- 1) America, 1913
 - 2) England, 1917
 - 3) Denmark, 1921
 - 4) Scotland, 1925
10. Gandhiji's movement of boycotting the foreign goods aimed at-
- 1) Promotion of Welfare State
 - 2) Creating anti-British sentiments
 - 3) Promotion of Cottage Industry
 - 4) Full independence
11. Which one of the following leaders belonged to the extremist wing of the Congress?
- 1) Aurobindo Ghosh
 - 2) Dadabhai Naoroji
 - 3) G.K.Gokhale
 - 4) S.N.Banerjee
12. At the Second Round Table Conference, the Indian National Congress was represented by-
- 1) Jawaharlal Nehru
 - 2) Rajendra Prasad
 - 3) M.K.Gandhi
 - 4) Vallabh Bhai Patel
13. Earth's gravitational pull is minimum in-
- 1) Troposphere
 - 2) Stratosphere
 - 3) Thermosphere
 - 4) Exosphere
14. The most abundant element in the Earth's Crust is
- 1) Aluminum
 - 2) Silica
 - 3) magnesium
 - 4) Sodium
15. Which of the following is not a Kharif crop?
- 1) Rice
 - 2) Maize
 - 3) Cotton
 - 4) Barley
16. 'Palghat' is a division of which of the following Railways?
- 1) Southern Railway
 - 2) South Eastern Railway
 - 3) South Central Railway
 - 4) South Western Railway
17. Which of the following Union Territories of India has the lowest population?
- 1) Pondicherry
 - 2) Daman and Diu
 - 3) Lakshadweep
 - 4) Andaman and Nicobar
18. 'Kakolat Water fall' is situated in which of the following States?
- 1) Bihar
 - 2) Uttar Pradesh
 - 3) Himachal Pradesh
 - 4) Uttarakhand
19. Which one of the following longitudes determines the Indian Standard Time?
- 1) 85.5°E
 - 2) 86.5°E
 - 3) 84.5°E
 - 4) 82.5°E

- 20.** The Nagarjunasagar Dam is built across which of the following rivers?
1) Krishna 2) Chambal 3) Kosi 4) Sutlej
- 21.** Which of the following is a scalar quantity?
1) Electric Field 2) Average Velocity
3) Power 4) Magnetic Momentum
- 22.** If the velocity of a body is doubled-
1) Its Kinetic Energy is doubled 2) Its potential Energy is doubled
3) Its Momentum is doubled 4) Its Acceleration is doubled
- 23.** Clothes keep us warm in winter because they-
1) supply heat
2) do not radiate heat
3) prevent air from contacting the body
4) prevent the heat of the body from escaping
- 24.** Permanent magnet can be made from-
1) Cobalt 2) Aluminum 3) Zinc 4) Lead
- 25.** Who among the following is known as 'Father of Biology'?
1) Aristotle 2) Darwin 3) Lamarck 4) Hippocrates
- 26.** Spiral shape bacteria is called-
1) Diplococcus 2) Bacillus 3) Coccus 4) Spirillum
- 27.** Which of the following bones is not found in human leg?
1) Tibia 2) Humerus 3) Femur 4) Fibula
- 28.** The enzyme found in human saliva is-
1) Renin 2) Ptyalin 3) Trypsin 4) Resin
- 29.** Virus of 'Bird Flu' is also known as-
1) H5N1 2) H1N5 3) H5N1 4) N5H1
- 30.** 'Gypsum' is an ore of-
1) Iron 2) Calcium 3) Sodium 4) Magnesium
- 31.** Which of the following is used for killing rats?
1) Zinc Phosphide 2) Duralumin 3) Zinc Oxide 4) Sodium Nitrate
- 32.** Which of the following is not an isotope of Hydrogen?
1) Protium 2) Tritium 3) Deuterium 4) Tritium

- 33.** Which of the following is not an Input Device?
- 1) Keyboard 2) Scanner 3) Mouse 4) Printer
- 34.** <http://www.discovery.com> is an example of-
- 1) Web browser 2) Website
3) Web page 4) Internet Service Provider
- 35.** A prescribed set of well-defined instructions for solving mathematical problems is called-
- 1) A Compiler 2) A code
3) A description 4) An algorithm
- 36.** Which part of the Indian Constitution deals with the Directive Principles of the State Policy?
- 1) Part I 2) Part III 3) Part IV 4) Part V
- 37.** The 44th amendment in the Constitution of India removed which one of the following rights from the category of Fundamental Rights?
- 1) Freedom of Speech 2) Equality before Law
3) Right of Property 4) Freedom of Religion
- 38.** Who was the first Chief Minister of Bihar?
- 1) Krishna Singh 2) K.B. Sahay
3) Mahamaya Prasad Sinha 4) Karpoori Thakur
- 39.** Who was the Prime Minister of India just before Dr. Manmohan Singh?
- 1) H.D. Deve Gowda 2) I.K. Gujral
3) P.V. Narasimha Rao 4) Atal Bihari Vajpayee
- 40.** Japan's Parliament is known as-
- 1) Diet 2) Dail 3) Yuan 4) Tokyo House
- 41.** 'Jamini Roy' was a famous-
- 1) Dance 2) Magician 3) Cartoonist 4) Painter
- 42.** 'NCERT' stands for-
- 1) National Committee of Educational Research and Training
2) National Council of Educational Research and Training
3) National Council for Educational Research and Teaching
4) National Council of Employment Resources and Training

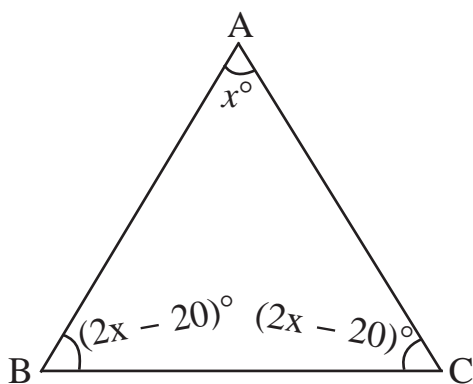
55. In a certain code language, '253' means 'books are old', '546' means 'man is old' and '378' means 'buy good books'. What stands for 'are' in that code?
1) 2 2) 4 3) 5 4) 6
56. If 'oranges' are 'apples', 'bananas' are 'apricots', 'apples' are 'chillies', 'apricots' are 'oranges' and 'chillies' are 'bananas', then which of the following are green in colour?
1) Apricots 2) Apples 3) Chillies 4) Bananas
57. In a certain code, ROAD is written as URDG. How will SWAN written in that code?
1) VXDQ 2) VZDQ 3) VZCP 4) UXDQ
58. If '+' means '÷', '×' means '÷' '÷' means '+' and '-' means '×', then which of the following will be the value of the expressions?
 $252 \times 9 - 5 + 32 \div 92$
1) 95 2) 168 3) 192 4) 200
59. If P denotes '÷', Q denotes '×' R denotes '+' and S denotes '-', then.
 $18 Q 12 P 4 R 5 S 6 = ?$
1) 95 2) 53 3) 51 4) 57
60. The following equation may be corrected by interchanging which two signs?
 $5 \times 15 \div 7 - 20 + 4 = 77$
1) - and + 2) × and ÷ 3) + and ÷ 4) + and ×
61. In the alternatives given below, three are alike in some manner while the fourth one is different. Choose the odd one.
1) Garo 2) Khasi 3) Kangra 4) Jaintia
62. In the alternatives given below, three are alike in some manner while the fourth one is different. Choose the odd one.
1) Triangle 2) Tangent 3) Square 4) Rhombus
63. In the alternatives given below, three are alike in some manner while the fourth one is different. Choose the odd one.
1) Up 2) Down 3) Above 4) Small
64. In the alternatives given below, three are alike in some manner while the fourth one is different. Choose the odd one.
1) Run 2) Walk 3) Think 4) Jump

- 65.** 'Flower' is related to 'Essence' in the same way as 'Oven' is related to-
- 1) Vapour 2) Fire 3) Heat 4) Steam
- 66.** 'Gravity' is related to 'Pull' in the same way as 'Magnetism' is related to-
- 1) Repulsion 2) Separation 3) Attraction 4) Push
- 67.** Choose the correct alternative that will continue the same pattern and replace the question mark (?) in the given series.
- 120, 99, 80, 63, 48, ?
- 1) 35 2) 38 3) 39 4) 40
- 68.** Choose the correct alternative that will continue the same pattern and replace the question mark (?) in the given series.
- 1, 5, 14, 30, 55, 91, ?
- 1) 130 2) 140 3) 150 4) 160
- 69.** Choose the correct alternative that will continue the same pattern and replace the question mark (?) in the given series.
- 2, 12, 36, 80, 150, ?
- 1) 194 2) 210 3) 252 4) 258
- 70.** Choose the correct alternative that will continue the same pattern and replace the question mark (?) in the given series.
- 1) KSU 2) LMN 3) SOV 4) SOW
- 71.** Choose the correct alternative that will continue the same pattern and replace the question mark (?) in the given series.
- M, N, O, L, R, I, V, ?
- 1) A 2) E 3) F 4) H
- 72.** A and B are brothers. C and D are sisters. A's son is D's brother. How is B related to C?
- 1) Father 2) Brother 3) Grandfather 4) Uncle
- 73.** Introducing a man, a woman said, 'His wife is the only daughter of my father'. How is that man related to the woman?
- 1) Brother 2) Father-in-law
- 3) Husband 4) Maternal Uncle

- 74.** A man is facing West. He turns 45° in the clock-wise direction and then another 180° in the same direction and then 270° in the anti-clockwise direction. Which direction is he facing now?
- 1) South 2) North-West 3) West 4) South-West
- 75.** A man starts from a point 'X' and walks 3 km southwards, then he turns left and walks 6 km. In which direction is he from the starting point?
- 1) South-West 2) South-East 3) West 4) South
- 76.** The H.C.F. of 595 and 252 is-
- 1) 1 2) 7 3) 11 4) 17
- 77.** The L.C.M. of 26, 56, 104 and 182 is-
- 1) 456 2) 728 3) 748 4) 1274
- 78.** $\frac{6.5 \times 4.7 + 6.5 \times 5.3}{1.3 \times 7.9 - 1.3 \times 6.9} = ?$
- 1) 3.9 2) 39 3) 34.45 4) 50
- 79.** A student was asked to divide a number by 3. But, instead of dividing it, he multiplied it by 3 and got 29.7. What was the correct answer?
- 1) 3.3 2) 9.3 3) 9.8 4) 9.9
- 80.** $5852 \div 28 \times ? - 1653 = 1064$
- 1) 9 2) 13 3) 15 4) 18
- 81.** If ₹ 1440 is divided into two parts in which one part is $\frac{7}{9}$ of the second, then the smaller part is-
- 1) ₹ 405 2) ₹ 630 3) ₹ 810 4) ₹ 1035
- 82.** If $\sqrt{4^n} = 1024$, then the value of n is-
- 1) 5 2) 8 3) 10 4) 12
- 83.** If $\frac{1120}{\sqrt{P}} = 80$, then P = ?
- 1) 14 2) 140 3) 196 4) 225
- 84.** A man covers half of his journey at 6 km/ hr and the remaining half at 3 km/ hr. His average speed is-
- 1) 4 km/ hr 2) 4.5 km/ hr 3) 9 km/ hr 4) 3 km/ hr

- 85.** The average weight of 8 boys is increased by 1.5 kg when one of the boys, who weights 65 kg, is replaced by a new boy. The weight of the new boy is-
- 1) 70 kg 2) 74 kg 3) 76 kg 4) 77 kg
- 86.** The $\frac{4}{5}$ th of a certain number is 64. Half of the number is-
- 1) 40 2) 32 3) 80 4) 16
- 87.** The ratio between the present ages of Ravi and Jai is 3:2. If Ravi was 6 years older than Jai, four years back, how old is Jai now?
- 1) 6 years 2) 12 years 3) 18 years 4) Data inadequate
- 88.** $\left[\frac{81}{169} \right]^{\frac{-1}{2}} = ?$
- 1) $\frac{3}{169}$ 2) $\frac{2}{169}$ 3) $\frac{9}{13}$ 4) $\frac{13}{9}$
- 89.** The length of a rectangle is increased by 60%. By what percent would the width have to be decreased to maintain the same area?
- 1) $37\frac{1}{2}\%$ 2) 60% 3) 75% 4) $66\frac{2}{3}\%$
- 90.** By selling a tape-recorder for ₹ 950, I lose 5%. What percent shall I gain by selling it for a 1040?
- 1) 4% 2) 4.5% 3) 40% 4) 5%
- 91.** When 1 is added to each of the given two numbers, their ratio becomes 3 : 4 and when 5 is subtracted from each, the ratio becomes 7 : 10. The numbers are:
- 1) 8, 11 2) 11, 15 3) 26, 35 4) 27, 36
- 92.** 5 men or 9 women can do a piece of work 19 days. In how many days will 3 men and 6 women working together will finish the work?
- 1) 10 days 2) 15 days 3) 87 days 4) 38 days
- 93.** Two pipes can fill a tank in 20 minutes will 30 minutes respectively. If both the pipes are opened simultaneously, then the tank will be filled in-
- 1) 10 minutes 2) 12 minutes 3) 15 minutes 4) 25 minutes
- 94.** A train 132 metre long passes a telegraph post in 6 seconds. The speed of the train is-
- 1) 70 km/ hr 2) 72 km/ hr 3) 79.2 km/ hr 4) 80 km/ hr

95. The radius of the wheel of a vehicle is 70 cm. The wheel makes 10 revolutions in 5 seconds. The speed of the vehicle is-
- 1) 29.46 km/ hr 2) 31.68 km/ hr 3) 36.25 km/ hr 4) 32.72 km/ hr
96. The sides of a triangle are in the ratio $\frac{1}{2} : \frac{1}{3} : \frac{1}{4}$. If the perimeter is 52 cm, then the length of the smallest side is-
- 1) 9 cm 2) 10 cm 3) 11 cm 4) 12 cm
97. The area of the base of a rectangular tank is 6500 cm^2 and the volume of water contained in it is 2.6 cubic metres. The depth of the water tank is-
- 1) 2.5 metre 2) 3 metre 3) 5.5 metre 4) 4 metre
98. Two angles are complementary, if the sum of their measures is-
- 1) 90° 2) 100° 3) 180° 4) 360°
99. What is the value of X in the given figure?



- 1) 30 2) 40 3) 44 4) 64
100. $\sin^2 20^\circ + \sin^2 70^\circ - \tan^2 45^\circ = ?$
- 1) 0 2) 2 3) 1 4) $\frac{1}{2}$

ANSWERS

1-2; 2-2; 3-2; 4-2; 5-3; 6-2; 7-3; 8-2; 9-1; 10-2; 11-1; 12-3; 13-4; 14-1; 15-4; 16-2; 17-3; 18-1; 19-4; 20-1; 21-3; 22-3; 23-4; 24-2; 25-1; 26-4; 27-2; 28-2; 29-3; 30-2; 31-1; 32-2; 33-4; 34-2; 35-4; 36-3; 37-3; 38-1; 39-4; 40-1; 41-4; 42-2; 43-3; 44-2; 45-1; 46-3; 47-4; 48-1; 49-4; 50-1; 51-2; 52-2; 53-3; 54-2; 55-1; 56-4; 57-2; 58-4; 59-2; 60-3; 61-3; 62-2; 63-4; 64-3; 65-3; 66-3; 67-1; 68-2; 69-3; 70-1; 71-2; 72-4; 73-3; 74-4; 75-2; 76-2; 77-2; 78-4; 79-1; 80-2; 81-2; 82-3; 83-3; 84-1; 85-4; 86-1; 87-2; 88-4; 89-1; 90-1; 91-3; 92-2; 93-2; 94-3; 95-2; 96-4; 97-4; 98-1; 99-3; 100-1.

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PREVIOUS PAPER

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Based on Memory

- Which of the following states of India has the longest coastline?
 - 1) Kerala
 - 2) Gujarat
 - 3) Tamil Nadu
 - 4) Andhra Pradesh
- Where was the capital of Ranjit Singh, the king of Punjab, located?
 - 1) Peshawar
 - 2) Amritsar
 - 3) Lahore
 - 4) Rawalpindi
- The fundamental duties are enshrined in which Article of the Indian Constitution?
 - 1) Article 51 A
 - 2) Article 50 A
 - 3) Article 50 B
 - 4) Article 51 B
- The mineral structure of diamond is
 - 1) Zinc
 - 2) Nickel
 - 3) Nitrogen
 - 4) Carbon
- Which part of the body is affected by Jaundice?
 - 1) Small intestine
 - 2) Liver
 - 3) Stomach
 - 4) Pancreas
- Which country of the world has the largest number of post offices?
 - 1) France
 - 2) China
 - 3) India
 - 4) Japan
- Uttar pradesh tops in the production of –in India.
 - 1) sugar cane
 - 2) rice
 - 3) barley
 - 4) wheat
- The safe temperature to keep eatables fresh in refrigerator is
 - 1) 4°C
 - 2) 0°C
 - 3) 18°C
 - 4) 10°C
- The instrument used to measure the blood pressure of human body is–
 - 1) Barometer
 - 2) Altimeter
 - 3) Sphygmomano meter
 - 4) Tachometer

- 10.** Automatic wrist watches get energy from–
- 1) twist in spring
 - 2) liquid crystal
 - 3) kinetic energy
 - 4) movement of our hands
- 11.** When a television is switched on
- 1) We listen the sound first and then see the picture
 - 2) We see the picture first and then listen sound
 - 3) It depends on the TV manufacturing company
 - 4) We get audio and visual at the same time
- 12.** Goitre in human body is caused due to deficiency of–
- 1) Iodine
 - 2) Phosphorus
 - 3) Nitrogen
 - 4) Calcium
- 13.** Who sent Huensant as ambassador in the court of Harsha?
- 1) Fu Chen-Chu
 - 2) Tai Sung
 - 3) Tung Cuan
 - 4) None of these
- 14.** Who wrote Akbarnama?
- 1) Faizi
 - 2) Abdul Rahim Khankhana
 - 3) Abul Fazal
 - 4) Abdul Kadir Badayun
- 15.** Which metal is generally used to make electro magnets?
- 1) Copper
 - 2) Nickel
 - 3) Iron
 - 4) Cobalt
- 16.** Artificial silk is called–
- 1) Rayon
 - 2) Dacron
 - 3) Fibre glass
 - 4) Nylon
- 17.** Dynamo converts–
- 1) electrical energy into mechanical energy
 - 2) High voltage into low voltage
 - 3) Low voltage into high voltage
 - 4) Mechanical energy into electrical energy
- 18.** The instrument used to measure the electric current is
- 1) Barometer
 - 2) Altimeter
 - 3) Ammeter
 - 4) Anemometer
- 19.** The best conductor of electricity is
- 1) Aluminium
 - 2) Copper
 - 3) Iron
 - 4) Silver
- 20.** Urea supplies– to the plants.
- 1) Calcium
 - 2) Phosphorus
 - 3) Potassium
 - 4) Nitrogen

- 21.** Mica is used in–
- 1) Furnace
 - 2) Electric industry
 - 3) Steel Industry
 - 4) Glass Manufacturing
- 22.** Which of the following is a physical change?
- 1) Burning of cooking gas
 - 2) Fermentation of milk
 - 3) Digestion of food
 - 4) Dissolution of sugar in water
- 23.** The chemical compound used in photography is
- 1) Aluminium Hydroxide
 - 2) Silver Bromide
 - 3) Potassium Nitrate
 - 4) Sodium Chloride
- 24.** What causes cholera?
- 1) Bacteria
 - 2) Virus
 - 3) Fungus
 - 4) Algae
- 25.** An apparatus for viewing objects lying above the eye level of the observer and whose direct vision is obstructed is known as–
- 1) Photometer
 - 2) Periscope
 - 3) Planimeter
 - 4) Spectrometer
- 26.** Which atom has only one electron?
- 1) Potassium
 - 2) Nitrogen
 - 3) Oxygen
 - 4) Hydrogen
- 27.** What the electrode that is connected to the negative pole of the battery is called?
- 1) Cathode
 - 2) Electroplate
 - 3) Ion
 - 4) Anode
- 28.** The organic acid present in vinegar is–
- 1) butanoic acid
 - 2) propanoic acid
 - 3) methanoic acid
 - 4) ethanoic acid
- 29.** Which of the following is an example of fossil fuel?
- 1) Coke
 - 2) Natural gas
 - 3) Coal gas
 - 4) Producer gas
- 30.** Water gas consists of
- 1) a mixture of carbon monoxide and hydrogen
 - 2) water vapour and coal dust
 - 3) a mixture of carbon monoxide and nitrogen
 - 4) water vapour and methane
- 31.** A body strike the floor vertically with a velocity u and rebounds at the same speed. The change of speed would be–
- 1) $3u$
 - 2) Zero
 - 3) u
 - 4) $2u$

- 32.** Which of the following is different from others?
1) Speed 2) Time 3) Density 4) Force
- 33.** Momentum has the same unit as that of—
1) torque 2) couple
3) impulse 4) moment of momentum
- 34.** What is the momentum of a man of mass 75 kg when he walks with a uniform velocity of 2m/s?
1) 50 kg m/s 2) 75 kg m/s 3) 100 kg m/s 4) 150 kg/s
- 35.** At the centre of the earth, the value of g becomes—
1) infinity 2) unity 3) zero 4) None of these
- 36.** Two unequal masses possess the same momentum, then the kinetic energy of the heavier mass isthe kinetic energy of the lighter mass.
1) smaller than 2) greater than
3) same as 4) none of these
- 37.** 15 Bulbs of 60 W each, run for 6 hours daily and a fridge of 300 W runs for 5 hours daily. Find the forthrightly bill at the rate of 30 paise per unit.
1) Rs.31.05 2) Rs.45.55 3) Rs.62.10 4) Rs.75.10
- 38.** Sheaths are used in cables to—
1) Provide proper insulation 2) Provide mechanical strength
3) Prevent ingress of moisture 4) None of these
- 39.** For the stable operation of interconnected system, the passive element that can be used as interconnecting element is
1) Reactor 2) Resistor
3) Capacitor 4) Resistor and Capacitor
- 40.** The insulation resistance of a cable of length 10 km is $1\text{M}\Omega$, its resistance for 50 km length will be—
1) $\text{M}\Omega$ 2) $5\text{M}\Omega$ 3) $0.2\text{M}\Omega$ 4) $10\text{M}\Omega$
- 41.** The rate of change of momentum is directly proportional to—
1) Force 2) Inertia 3) Moment 4) None of these
- 42.** If four $80\text{ }\mu\text{F}$ capacitors are connected in parallel, the net capacitance is—
1) $20\text{ }\mu\text{F}$ 2) $80\text{ }\mu\text{F}$ 3) $160\text{ }\mu\text{F}$ 4) $320\text{ }\mu\text{F}$

- _____

- 53.** What is the function of Ozone layer?
- 1) Prevents harmful infra-red rays of the sun from reaching the earth
 - 2) Prevents radiation escaping the earth, hence keeping it warm
 - 3) It is essential for rainfall
 - 4) It filters harmful ultra-violet rays of the sun
- 54.** In the International system of measurement, the 'Kelvin' is the unit of—
- 1) mass
 - 2) temperature
 - 3) electric current
 - 4) air
- 55.** The Sanchi Stupa was constructed by—
- 1) Chandragupta
 - 2) Ashoka
 - 3) Kunal
 - 4) Harshavardhan
- 56.** The first atomic power plant was started in India at—
- 1) Narora
 - 2) Tarapur
 - 3) Rawat bhata
 - 4) None of these
- 57.** To conserve the eatables we use—
- 1) Benzoic acid
 - 2) Sodium chloride
 - 3) Sodium carbonate
 - 4) None of these
- 58.** The least polluting fuel is—
- 1) Hydrogen
 - 2) Diesel
 - 3) Kerosene
 - 4) Coal
- 59.** Malaria spreads by—
- 1) Culex mosquito
 - 2) Anopheles mosquito
 - 3) Water borne mosquito
 - 4) None of these
- 60.** Heart disease is caused by increase in—
- 1) Glucose
 - 2) Cholesterol
 - 3) Heparin
 - 4) Haemoglobin
- 61.** Which vitamin helps in clotting of blood?
- 1) Vitamin B
 - 2) Vitamin B₂
 - 3) Vitamin K
 - 4) Vitamin D
- 62.** The chief source of energy is—
- 1) Vitamin
 - 2) Minerals
 - 3) Carbohydrate
 - 4) Water
- 63.** The chief centre of learning during lord Buddha era was—
- 1) Nalanda
 - 2) Delhi
 - 3) Varanasi
 - 4) Bodh Gaya
- 64.** Mustard is grown in—
- 1) Kharif season
 - 2) Rabi season
 - 3) Jayad season
 - 4) Whole year
- 65.** In case the posts of President and Vice-President lie vacant, who officiates as the President?
- 1) Speaker of the Lok Sabha
 - 2) Chief Justice of India
 - 3) Attorney General of India
 - 4) Chairman of Rajya Sabha

66. Magnetic needle directs to—
1) East 2) Sky 3) North 4) West
67. Lord Buddha got emancipation (Mahapari nirvana) at—
1) Kushinagar 2) Lumbini 3) Bodh Gaya 4) Kapilvastu
68. The colours on a colour code resistor are green, white, orange and silver. Find the value of resistor.
1) $5.9 \times 10^3 \pm 10\%$ 2) $59 \times 10^3 \pm 10\%$
3) $590 \times 10^3 \pm 10\%$ 4) $5900 \times 10^2 \pm 10\%$
69. The eddy current loss is directly proportional to
1) Area of metal 2) Volume of metal
3) Length of metal 4) Weight of metal
70. Direction of dynamically induced e.m.f is given by—
1) Lenz's law 2) Flemings right hand rule
3) Flemings left hand rule 4) Cork screw rule
71. The Rowlatt Act, 1919 empowered the British Government to:
1) extend the period of imprisonment for Indians
2) close down any industrial unit at its discretion
3) release all the political prisoners by 1921
4) detain a person for any duration without trial
72. The latitude of a place situated on the equator is:
1) 0° 2) $23 \frac{1}{2}^\circ$ 3) $33 \frac{1}{2}^\circ$ 4) $66 \frac{1}{2}^\circ$
73. The purpose of inclusion of Directive Principles in the Constitution is to establish:
1) A Social democracy 2) Gandhian democracy
3) Social and economic democracy 4) Political democracy
74. A fisherman is stranded in a lake because the motor of his motor-boat has failed. What should he do to reach the shore?
1) He should start walking in his boat towards the shore
2) He should start throwing the fish he has collected away from the shore
3) He should lie flat on his boat
4) He should start throwing the fish he has collected towards the shore

- 75.** The elements in the portland cement is/are -
- 1) Silica, Alumina and Magnesia
 - 2) Lime, Silica and Magnesia
 - 3) Lime, Silica and Iron oxide
 - 4) Lime, Silica and Alumina
- 76.** The Indian Constitution came into force on -
- 1) January 21, 1950
 - 2) January 23, 1950
 - 3) January 26, 1950
 - 4) January 30, 1950
- 77.** Insulin activates in
- 1) Pancreas
 - 2) Parathyroid
 - 3) Liver
 - 4) Pituitary
- 78.** The whole structure of the world is regulated by –
- 1) Magnetic force
 - 2) Gravitational force
 - 3) Electric force
 - 4) None of these
- 79.** In India State Legislature includes–
- 1) Legislative Assembly & Legislative Council
 - 2) Legislative Assembly & Council of Ministers
 - 3) Governor, Legislative Assembly & Legislative Council
 - 4) Only Legislative Assembly
- 80.** Which country is on the top in Gold production?
- 1) China
 - 2) South Africa
 - 3) Brazil
 - 4) Argentina
- 81.** Who wrote "Causes of the Indian Mutiny"?
- 1) Sayyid Ahmad Khan
 - 2) D.H.Buchanan
 - 3) R.P.Dutt
 - 4) Chittaranjan Das
- 82.** Ranji Trophy and Aga Khan Cup are associated with:
- 1) Cricket and Volleyball
 - 2) Badminton and Hockey
 - 3) Cricket and Football
 - 4) Cricket and Hockey
- 83.** Where is the headquarters of the International Red Cross Committee?
- 1) Prague
 - 2) Geneva
 - 3) Moscow
 - 4) Berlin
- 84.** Which Article in the Indian Constitution empowers the President to dissolve the Lok Sabha?
- 1) Article 82
 - 2) Article 84
 - 3) Article 85
 - 4) Article 90
- 85.** Which among the following countries has made 'euthanasia' legally valid?
- 1) Newzealand
 - 2) Denmark
 - 3) Australia
 - 4) Netherlands

Directions (86-88): Find the missing in the following series.

86. 6, 10, 27, 52, 153, ?

- 1) 308 2) 305 3) 304 4) 306

87. 12, 15, 30, 37.5, 75, ?

- 1) $93\frac{1}{2}$ 2) $93\frac{3}{5}$ 3) $93\frac{3}{4}$ 4) $93\frac{1}{4}$

88. 88, 56, 19, ?

- 1) 8 2) 7 3) 10 4) -8

Directions (89-91): In the following number series, one of the numbers does not fit into the series. Find the wrong number.

89. 7, 9, 16, 27, 47, 77, 119

- 1) 9 2) 16 3) 77 4) 27

90. 4, 5, 12, 39, 160, 804, 4836

- 1) 12 2) 804 3) 39 4) 4836

91. 844, 420, 208, 102, 47, 22.5, 9.25

- 1) 420 2) 208 3) 47 4) 22.5

92. In a certain code "DEVIL" is written as ABSEFI. How is "OTHER" written in that code?

- 1) LRECO 2) LQEBO 3) LWEBU 4) RWKHU

93. In a certain code language "637" means sea is black. "547" means colour is beautiful and "35" means black colour. Which digit in the language means beautiful?

- 1) 6 2) 4 3) 5 4) 3

Directions (94-98): Read the following information to answer the given questions:

- (i) A, B, C, D, E and F are six family members.
- (ii) There is one doctor, one lawyer, one pilot, one student and one housewife.
- (iii) There are two married couples in the family
- (iv) F who is a lawyer is father of A.
- (v) B is a pilot and mother of C
- (vi) D is grandmother of C and is a housewife
- (vii) E is father of F and is a doctor
- (viii) C is brother of A

94. How many female members are there in the family?

- 1) 3 2) 2 3) 3 or 4 4) None of these

95. How is A related to D?

- 1) Granddaughter 2) Grandson
3) Son 4) Either granddaughter or grandson

96. Which of the following statements is definitely true?

- 1) A is engineer 2) E is the father of the pilot
3) D is the mother of the Pilot 4) F is the father of the engineer

97. Who is student?

- 1) Either C or A 2) B's son 3) A 4) C

98. Which of the following is one of the pair of married couples?

- 1) FB 2) FA 3) CF 4) FD

Directions (99-100): Find the wrong one.

99. 1) River 2) Pond 3) Well 4) Tank

100. 1) North 2) Right 3) East 4) South

101. The basis for measuring thermodynamic property of temperature is given by—

- 1) zeroth law of thermodynamics 2) first law of thermodynamics
3) second law of thermodynamics 4) third law of thermodynamics

102. One watt is equal to—

- 1) 1 Nm/s 2) 1 N/mt 3) 1 Nm/t 4) 1 k Nm/mt

103. Work done is zero for the following process—

- 1) constant volume 2) free expansion
3) throttling 4) all of the above

104. One calorie in kgm is equal to

- 1) 0.427 2) 4.27 3) 42.7 4) 427

105. On volume basis, air contains following parts of Oxygen

- 1) 21 2) 23 3) 25 4) 77

106. Universal gas constant is defined as equal to product of the molecular weight of the gas and

- 1) specific heat at constant pressure 2) specific heat at constant volume
3) ratio of two specific heat 4) gas constant

107. Strictly speaking all engineering processes are–

- | | |
|-----------------|-------------------------------------|
| 1) quasi-static | 2) thermodynamically in equilibrium |
| 3) irreversible | 4) reversible |

108. In a free expansion process

- | | |
|----------------------|---|
| 1) work done is zero | 2) heat transfer is zero |
| 3) both (1) and (2) | 4) work done is zero but heat increases |

109. Which of the following process is irreversible process

- | | | | |
|---------------|--------------|---------------|---------------------|
| 1) isothermal | 2) adiabatic | 3) throttling | 4) all of the above |
|---------------|--------------|---------------|---------------------|

110. Minimum work in compressor is possible when the value of adiabatic index n is equal to–

- | | | | |
|---------|------|---------|---------|
| 1) 0.75 | 2) 1 | 3) 1.27 | 4) 1.35 |
|---------|------|---------|---------|

111. In DC motor the direction of induced emf is opposite to main bars as per–

- | | |
|------------------------------|------------------|
| 1) fleming's left hand rule | 2) lenz's law |
| 3) fleming's right hand rule | 4) faradays' law |

112. The condition for max power developed by the motor–

- | | |
|-----------------|----------------------------------|
| 1) $E_b = v/2$ | 2) Cost losses = variable losses |
| 3) Both (1) and | 4) $I^2 a R_a$ = mechanical loss |

113. The T_a/I_a graph of a DC series motor is a–

- 1) parabola from no load to over load
- 2) straight line through out
- 3) parabola up to full load and a time at over load
- 4) parabola through out

114. 220V shunt motor develops torque of 54 nM at armature current of 10A. The torque produced when the armature current is 20A is–

- | | | | |
|----------|-----------|------------|-----------|
| 1) 54 NM | 2) 81 N.M | 3) 108 N.M | 4) 27 N.M |
|----------|-----------|------------|-----------|

115. Which type of DC generator is used in welding machines–

- | | |
|--------------------------|--------------------------|
| 1) series generator | 2) shunt generator |
| 3) cumulatively compound | 4) differential compound |

ANSWERS

1-2; 2-3; 3-1; 4-4; 5-2; 6-3; 7-4; 8-1; 9-3; 10-1; 11-1; 12-1; 13-2; 14-3; 15-3; 16-1; 17-4; 18-3; 19-4; 20-4; 21-2; 22-4; 23-2; 24-1; 25-2; 26-4; 27-1; 28-2; 29-1; 30-1; 31-4; 32-2; 33-3; 34-4; 35-3; 36-1; 37-1; 38-1; 39-3; 40-2; 41-1; 42-4; 43-2; 44-2; 45-1; 46-2; 47-2; 48-3; 49-2; 50-2; 51-1; 52-2; 53-4; 54-2; 55-2; 56-2; 57-1; 58-1; 59-2; 60-2; 61-3; 62-3; 63-1; 64-2; 65-2; 66-3; 67-1; 68-2; 69-2; 70-2; 71-4; 72-2; 73-3; 74-3; 75-3; 76-3; 77-1; 78-2; 79-3; 80-2; 81-2; 82-4; 83-4; 84-2; 85-4; 86-3; 87-3; 88-4; 89-2; 90-2; 91-3; 92-2; 93-2; 94-4; 95-4; 96-4; 97-1; 98-1; 99-1; 100-2; 101-1; 102-1; 103-4; 104-1; 105-1; 106-4; 107-3; 108-3; 109-3; 110-2; 111-2; 112-1; 113-3; 114-3; 115-4.

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