

SAMPLE PAPER-01

SCHOLASTIC APTITUDE TEST

1. The short name of the institution related to the space programme is
(1) BARC (2) CAT (3) SHAR (4) BEL
2. Value of one Fermi is
(1) 10^{-13} metre (2) 10^{-14} metre
(3) 10^{-15} metre (4) 10^{-16} metre
3. Unit of impulse is
(1) Newton (2) Newton \times Second
(3) Newton \times (Second)² (4) Newton per second
4. Sound with frequency more than 20 KHz is known as
(1) Audible sound (2) Ultrasonic
(3) Inaudible sound (4) None of these
5. When the diameter of a wire is doubled, its resistance becomes
(1) Double (2) Four times
(3) One half (4) One-fourth
6. The north pole of earth's magnet is in the
(1) Geographical South (2) Geographical East
(3) Geographical West (4) Geographical North
7. The frequency of alternating current (a.c.) supply in India is
(1) 0 Hz (2) 50 Hz (3) 60 Hz (4) 100 Hz
8. A non renewable source of energy is
(1) Wood (2) Alcohol
(3) Hydrogen gas (4) Natural gas
9. Which of the following is used as a moderator in the reactor of a nuclear power station?
(1) Liquids sodium (2) Boron
(3) Graphite (4) Carbon-dioxide
10. The mirror used by a dentist to examine the teeth of a person is
(1) Convex (2) Concave
(3) Plane (4) Plano convex
11. The twinkling of stars is due to atmospheric
(1) Reflection of light (2) Dispersion of light
(3) Interference of light (4) Refraction of light
12. The blue colour of sky is due to
(1) Refraction of light (2) Dispersion of light
(3) Diffraction of light (4) Scattering of light
13. A cylindrical bar magnet is kept along the axis of a circular coil. If the magnet is rotated about its axis, then
(1) a current will be induced in the coil
(2) no current will be induced in the coil
(3) only emf will be induced in the coil
(4) an emf and current both will be induced in the coil.
14. Biogas is produced from biomass by
(1) anaerobic fermentation
(2) destructing distillation
(3) fractional distillation
(4) mixing petrol in biomass
15. Neutron was discovered by
(1) Thomson (2) Rutherford
(3) Chadwick (4) Niels Bohr
16. Which alloy of aluminium is used for making aircrafts ?
(1) Alnico (2) Y-Alloy
(3) Duralumin (4) Aluminium Bronze
17. Common name of sodium carbonate is
(1) Baking soda (2) Washing soda
(3) Bleaching powder (4) Quick lime
18. Which metal is known as 'quick-silver' ?
(1) Mercury (2) Aluminium
(3) Antimony (4) Strontium
19. Which compound is obtained when formaldehyde react with phenol in alkaline medium ?
(1) Paraformaldehyde (2) Farmamint
(3) Urotropin (4) Bakelite
20. d-block elements are
(1) Representative elements
(2) Transition elements
(3) Inner transition elements
(4) Inert gases
21. In the bioluminescence process in firefly, the main substance involved for the glow is
(1) Diphenylamine (2) Resorcinol
(3) Anisole (4) Luciferrin
22. Iron ore is
(1) Bauxite (2) Dolomite
(3) Haematite (4) Calamine

23. The number of molecules in 22 g of carbon-dioxide is:
(1) 1.51×10^{23} molecules
(2) 3.0115×10^{23} molecules
(3) 12.046×10^{23} molecules
(4) none of these
24. Strength of caustic soda solution is 2g/litre, pH of this solution will be ($\log 2 = 0.30$)
(1) 11.9 (2) 9.7 (3) 10.8 (4) 12.7
25. On going from left to right in a period, the size of atom decreases but the size of the noble gas atom is greater than the size of other elements of same period, Why ?
(1) Less reactivity
(2) Measurement of Vander Waals radius
(3) Absence of any valence electron
(4) Effective nuclear charge in greater
26. If a liquid 'X' has boiling point of 353 K and another liquid 'Y' has a boiling point of 384 K and X and Y are miscible with each other, which one of the following is correct?
(1) X and Y can be separated using separating funnel.
(2) X and Y can be separated by distillation.
(3) X and Y can be separated by fractional distillation.
(4) X and Y can be separated either by distillation or by fractional distillation.
27. $2Al + 6H_2O \longrightarrow A + B$, A and B are:
(1) Al_2O_3 and $6H_2$
(2) $2Al(OH)_3$ and $3H_2$
(3) $2AlH_3$ and $3O_2$
(4) none of these
28. Which two species obtain nutrition as symbionts in Lichens ?
(1) Rhizobium and Drosera
(2) Fungi and Rose plant
(3) Algae and Virus
(4) Algae and Fungi
29. The embryo gets nutrition from the mother's blood with the help of special tissue called
(1) Placenta (2) Zygote
(3) Ovum (4) Sperm
30. The function of xylem in plants is
(1) Transport of food
(2) Transport of oxygen
(3) Transport of water and minerals
(4) Transport of amino acids
31. The muscles found connected to the bones are
(1) Striated muscles (2) Unstriated muscles
(3) Cardiac muscles (4) All of the above
32. Botanical name of Tulsi is
(1) *Ocimum sanctum* (2) *Saraca indica*
(3) *Ficus benghalensis* (4) *Eagle mormelos*
33. Insulin hormone is secreted by
(1) Lymphatic gland (2) Salivary gland
(3) Pancreas (4) Pituitary gland
34. Which cell organelle is known as "Suicidal bag" ?
(1) Centrosome (2) Mesosome
(3) Lysosome (4) Chromosome
35. Crossing over takes place in stage of cell division.
(1) Leptotene (2) Pachytene
(3) Diplotene (4) Zygotene
36. The sequence of process related with respiration is
(1) Krebs's cycle \rightarrow Glycolysis \rightarrow Electron transport system
(2) Glycolysis \rightarrow Krebs's cycle \rightarrow Electron transport system
(3) Electron transport system \rightarrow Krebs's cycle \rightarrow Glycolysis
(4) None of the above
37. Which of the following constitute a food chain ?
(1) Grass, Wheat, Mango
(2) Grass, Goat, Lion
(3) Cow, Goat, Elephant
(4) Grass, Fish, Goat
38. HIV virus when active in body, mainly attacks on
(1) Lungs (2) Liver
(3) Heart (4) Immune system
39. Depletion of ozone layer is mainly due to
(1) Methane
(2) Carbon monoxide
(3) Chlorofluorocarbon
(4) Nitrogen

- 40.** Which of the options given below would not work in the following sentence?
In order for the body to absorb and use _____ these must be broken down by hydrolysis into _____.
- (1) polysaccharides, monosaccharides
(2) amino acids, proteins
(3) fats, glycerol and fatty acids
(4) disaccharides, monosaccharides
- 41.** A boatman can row downstream 30 km in 2 hours and upstream 6 km in 2 hours. The speed of boatman's rowing and speed of water current are respectively (in km)
- (1) 9, 6 (2) 6, 4
(3) 12, 9 (4) None of these
- 42.** If after 5 years 'A' will be twice as old as 'B'. At present 'B' is 5 times older than 'C' whose age before 3 years was 3 years. The present age of 'A' is
- (1) 50 (2) 60 (3) 55 (4) 65
- 43.** The marked price of an umbrella is Rs. 80. If it is sold for Rs. 68. The rate of discount will be
- (1) $17\frac{11}{17}\%$ (2) 20% (3) $16\frac{2}{3}\%$ (4) 15%
- 44.** If $p - q = -8$ and $pq = -12$ then the value of $p^3 - q^3$ is
- (1) 224 (2) -224 (3) 242 (4) -242
- 45.** If $2 \pm \sqrt{3}$ are zeroes of $x^4 - 6x^3 - 26x^2 + 138x - 35$ then the other zeroes are
- (1) -5, -7 (2) 5, -7 (3) -5, 7 (4) 5, 7
- 46.** $(a + b + c)(ab + bc + ca) - abc$ is equal to the
- (1) $(a + b)(b + c)(c + a)$ (2) $(a - b)(b + c)(c + a)$
(3) $(a + b)(b - c)(c + a)$ (4) $(a + b)(b + c)(c - a)$
- 47.** If a, b, c and d are in continued proportion then which of the following is true
- (1) $(b + c)(c + a) = (b + d)(c + d)$
(2) $(b + c)(c + d) = (b + d)(c + a)$
(3) $(b + d)(b + c) = (c + a)(c + d)$
(4) $(a + b)(c + d) = (a + d)(b + c)$
- 48.** If 1 and β are roots of the quadratic equation $2x^2 + px - 2p = 0$, then which of the following statement is true
- (1) $(x + 2)(x + 1) = 0$ (2) $(x + 2)(x - 1) = 0$
(3) $(x - 2)(x + 1) = 0$ (4) $(x - 2)(x - 1) = 0$
- 49.** $\tan^4\theta + \tan^6\theta$ is equal to
- (1) $\tan^4\theta \cdot \sec^2\theta$ (2) $\tan^2\theta \cdot \sec^4\theta$
(3) $\tan^2\theta \cdot \sec^2\theta$ (4) $\tan^2\theta \cdot \sec^6\theta$
- 50.** In a triangle, the bisector of an angle bisects the opposite side then the triangle will be
- (1) Equilateral triangle (2) Isosceles triangle
(3) Right angled triangle (4) None of these
- 51.** AB and AC are equal chords of a circle with centre O. Then by which angle OA bisects BC
- (1) 30° (2) 60° (3) 90° (4) 120°
- 52.** Which of the following is not true ?
- (1) $\sin^2 25^\circ + \sin^2 65^\circ = 1$
(2) $\sin(90^\circ - \theta) \cos(90^\circ - \theta) = \frac{\tan\theta}{1 + \tan^2\theta}$
(3) $\cos 60^\circ = 1 - 2\cos^2(90^\circ - 30^\circ)$
(4) $\cos^2\theta - \sin^2\theta = \frac{\tan\theta}{1 - \tan^2\theta}$
- 53.** The area of adjacent faces and surface area of a cuboid with volume v and sides a, b, c are respectively x, y, z and s. Then which of the following is false ?
- (1) $\frac{1}{v} = \frac{2}{s} \left(\frac{1}{a} + \frac{1}{b} + \frac{1}{c} \right)$ (2) $v^2 = x \cdot y \cdot z$
(3) $s = 2(x + y + z)$ (4) $s = x + y + z$
- 54.** If $(25)^{x-3} = (125)^{2x-3}$, then the values of x is
- (1) $\frac{4}{3}$ (2) $\frac{3}{4}$ (3) $\frac{3}{2}$ (4) $\frac{2}{3}$
- 55.** From the natural number 1 to 19, a number is chosen randomly. The probability that the number is a prime number is
- (1) $\frac{8}{19}$ (2) $\frac{7}{19}$ (3) $\frac{6}{19}$ (4) $\frac{5}{19}$
- 56.** The simplest rationalizing factor of $\sqrt[3]{72}$ is
- (1) $2^{\frac{1}{3}}$ (2) $3^{\frac{1}{3}}$ (3) $3^{\frac{1}{2}}$ (4) $2^{\frac{1}{2}}$
- 57.** The difference of squares of two natural numbers is 45. The square of the smaller number is four times the larger number. The larger number is
- (1) 8 (2) 5
(3) 9 (4) 6

- 58.** A shopkeeper marked 50% more on cost price of an item. If he gives a discount of 20%, then his profit percent is
 (1) 30% (2) 25% (3) 20% (4) 15%
- 59.** ABCD is a rhombus and P, Q, R, S, are respectively mid points of sides AB, BC, CD, DA. Then $\angle RSP$ is
 (1) 120° (2) 90° (3) 60° (4) 30°
- 60.** If a student spent 4 hours in a day on home work then the corresponding angular value of this activity in π chart of his daily activities will be
 (1) 60° (2) 45° (3) 90° (4) 25°
- 61.** Who called the Revolution of 1857 as the first war of independence of India ?
 (1) Vinayak Damodar Savarkar
 (2) Bahadur Shah Jafar
 (3) Tantya Tope
 (4) Mangal Pandey
- 62.** What was the reason behind the national awakening in India ?
 (1) Religious and Social 'Renaissance'
 (2) Means of transportation and communication
 (3) English Education
 (4) All of the above
- 63.** Who was the following leaders belongs to the moderate ideology of nationalism ?
 (1) Gopalkrishna Gokhale
 (2) Bal Gangadhar Tilak
 (3) Lala Lajpat Rai
 (4) Arvindo Ghosh
- 64.** In which year did the partition of Bengali take place ?
 (1) 1902 (2) 1904 (3) 1905 (4) 1910
- 65.** In which movement Gandhiji appealed for Do or die ?
 (1) Non Cooperation Movement
 (2) Kheda Satyagrah
 (3) Civil Disobedience Movement
 (4) Quit India Movement
- 66.** When was the 'Forward Block' by Subhash Chandra Bose established ?
 (1) 1937 (2) 1939
 (3) 1941 (4) 1943
- 67.** When was the war of 1857 started ?
 (1) 10th May 1857 (2) 29th March 1857
 (3) 6th April 1857 (4) 15th May 1857
- 68.** Who was the Father of Indian Renaissance ?
 (1) Dayanand Saraswati
 (2) Raja Ram Mohan Roy
 (3) Keshav Chandra Sen
 (4) Ram Krishna Paramhansa
- 69.** Who led the 'Lal Kurti' Movement?
 (1) Mahatma Gandhi
 (2) Khan Abdul Gaffar Khan
 (3) Moulana Azad
 (4) Jinnah
- 70.** Which of the following plan included the proposal of the Formation of Interim Government ?
 (1) Cripps Mission (2) Wavell Plan
 (3) Cabinet Mission (4) Mountbatten Plan
- 71.** "Ranigaon" is famous for
 (1) Water conservation
 (2) Organic Agriculture
 (3) Environment Conservation
 (4) Chipko Movement
- 72.** In which State "Silicon Valley" is situated?
 (1) Kerala (2) Andhra Pradesh
 (3) Karnataka (4) Tamil Nadua
- 73.** When the word "Acid Rain" was first used?
 (1) 1953 (2) 1983
 (3) 1973 (4) 1873
- 74.** What is the percentage of forest of total Geographical Area in India?
 (1) 30.01% (2) 25.02%
 (3) 33.01% (4) 20.64%
- 75.** In which year Meteorological Department in India was set-up?
 (1) 1874 (2) 1864
 (3) 1974 (4) 1964
- 76.** Time Meridian Line for Indian standard time is
 (1) $81^\circ 30'$ (2) $82^\circ 30'$
 (3) $83^\circ 30'$ (4) $84^\circ 30'$
- 77.** Indian Peninsular Plateau is formed by Rocks.
 (1) Sedimentary Rocks (2) Igneous Rocks
 (3) Metamorphic Rocks (4) Non of the above

- 78.** Kaziranga National Park is situated in State of India.
 (1) Rajasthan (2) Gujarat
 (3) Madhya Pradesh (4) Assam
- 79.** The Helicopter service which was started to help the oil Region in sea and coastal areas of India is
 (1) Pavan Hans (2) Vayu Sewa
 (3) Air-India (4) Raj Hans
- 80.** Which is the largest Paper producing State in India?
 (1) Andhra Pradesh (2) Maharashtra
 (3) West Bengal (4) Orissa
- 81.** Which Country's Parliament is treated as the Mother of World Parliament?
 (1) America (2) Britain
 (3) India (4) Switzerland
- 82.** From which country the concept of Fundamental Rights has been adopted
 (1) England (2) America
 (3) China (4) Ireland
- 83.** Who said this "Right to Constitutional Remedies are the soul of the Constitution"?
 (1) Dr. Ambedkar (2) Mahatama Gandhi
 (3) Nani Palkiwala (4) Dr. Rajendra Prasad
- 84.** In Democratic Countries an important function of legislature is
 (1) Formation of law
 (2) Amendment in Constitution
 (3) Discussion
 (4) Communalism
- 85.** What was the basic of the "Two Nation" theory propounded by Jinnah?
 (1) Caste (2) Language
 (3) Regionalism (4) Communalism
- 86.** Finance bill can be introduced in which house first
 (1) Lok Sabha (2) Rajya Sabha
 (3) In both houses (4) None of the above
- 87.** In democracy the Supreme Power resides in
 (1) People (2) Parliament
 (3) Cabinet (4) Officers
- 88.** Election Commission is a
 (1) Independent Constitutional body
 (2) Part of Judiciary
 (3) Part of Executive
 (4) None of these
- 89.** Right to Freedom is a
 (1) A Fundamental duty
 (2) A Fundamental Right
 (3) A legal Right
 (4) A Directive Principle of State Policy
- 90.** Who is the custodian of Fundamental Rights?
 (1) Parliament
 (2) Executive
 (3) Supreme Court
 (4) Election Commission
- 91.** Who started "Bhoodan Movement" in India?
 (1) Vinoba Bhave
 (2) Jai Praksh Narayan
 (3) Mahatama Gandhi
 (4) Lal Bhadur Shastri
- 92.** The period of 12th Five Year Plan is
 (1) 2002-2007
 (2) 2012-2017
 (3) 2007-2012
 (4) None of the above
- 93.** Who is the Governor of Reserve Bank of India at present?
 (1) D. Subbarao
 (2) P.Chidambaram
 (3) Raghu Ram Rajan
 (4) Narayan Reddy
- 94.** In India agriculture depends on
 (1) Monsoon
 (2) Technology
 (3) Government Policy
 (4) All of these

- 95.** The main characteristic of Indian Economy is
- (1) Low per capita income
 - (2) Lack of capital
 - (3) Over population
 - (4) All of these
- 96.** What was Chartism a movement for?
- (1) Equal pay for equal work
 - (2) For adult male franchise
 - (3) Limited hours of work
 - (4) For women franchise
- 97.** Which one of the following statements about chawls is not true?
- (1) They were multi-storeyed structures
 - (2) Working class people lived here
 - (3) They are owned by the government
 - (4) They were in the native part of town
- 98.** Bombay passed into British hands after marriage of Britain's King Charles II to which one of the following?
- (1) A French princess
 - (2) A Portuguese princess
 - (3) A Mughal princess
 - (4) A Dutch princess
- 99.** To which of the following European powers did the seven islands of Bombay belong before passing into the hands of the British?
- (1) German
 - (2) French
 - (3) Dutch
 - (4) Portuguese
- 100.** The first movie in India was shot in 1896 by :
- (1) Dada Saheb Phalke
 - (2) Harishchandra Bhatwadekar
 - (3) Raj Kapoor
 - (4) Prithviraj Kapoor