

Q.1) Which of the following is scalar quantity?

- [1] Force
- [2] Current
- [3] Velocity
- [4] Torque

Q.2) What happens to the value of gravitational constant G when the mass of one of the bodies is doubled?

- [1] 0
- [2] G
- [3] $2G$
- [4] $G/2$

Q.3) Water overflows either cooled from 4°C to 0°C or heated from 4°C to 10°C . It is due to _____ .

- [1] density of water is minimum at 4°C
- [2] density of water is maximum at 4°C
- [3] volume of water is maximum at 4°C
- [4] mass of water is maximum at 4°C

Q.4) What will be the pressure exerted by water at a depth of 1.5m in a pond where g is 9.8m/s^2 ?

- [1] 14000 Pa
- [2] 14350 Pa
- [3] 14700 Pa
- [4] 15000 Pa

Q.5) The temperature difference between hot and cold junction is 10°C which is same as _____ difference.

- [1] 0 K
- [2] 10 K
- [3] 273 K
- [4] 283 K

Q.6) Which of the following is correct?

- [1] The value of g is maximum at pole
- [2] The value of g is maximum at equator
- [3] The value of g is maximum at surface

[4] The value of g is maximum at Mt. Everest

Q.7) A football weighing 450g is set for free fall. What is the weight of it during the action

[1] 0 N

[2] 45 N

[3] 450 N

[4] 4500 N

Q.8) Solar energy is due to _____.

[1] Nuclear Fission

[2] Nuclear Fusion

[3] Radioactive disintegration

[4] Chain reaction

Q.9) When the object is placed at focus in front of concave lens, _____.

[1] real image is formed

[2] Virtual image is formed

[3] image is enlarged

[4] no image is formed

Q.10) How many electrons are equivalent to one coulomb charge?

[1] 1.6×10^{18}

[2] 6.25×10^{19}

[3] 1.6×10^{19}

[4] 6.25×10^{18}

Q.11) In a bar magnet, magnetic lines of field originate from _____ externally.

[1] North to South

[2] South to North

[3] North to East

[4] West to East

Q.12) A body of 2000 gm is displaced with 2 m/s. What is the Kinetic energy associated with the body?

[1] 2 J

[2] 4 J

[3] 20 J

[4] 40 J

Q.13) The velocity of light in vacuum is

[1] $3 \times 10^{18} \text{ m/s}$

[2] $2.5 \times 10^{18} \text{ m/s}$

[3] $3 \times 10^8 \text{ m/s}$

[4] $3.5 \times 10^8 \text{ m/s}$

Q.14) Water is used to cool hot engine because it has

[1] low specific heat capacity.

[2] high specific heat capacity.

[3] high mass.

[4] high temperature.

Q.15) The shape of our galaxy is

[1] spiral

[2] elliptical

[3] irregular

[4] hyperbolic

Q.16) The power of lens is measured in

[1] Meter

[2] Diopter

[3] Watt

[4] Calorie

Q.17) One newton is equal to

[1] 10 dynes

[2] 10^2 dynes

[3] 10^3 dynes

[4] 10^5 dynes

Q.18) Pitch of a sound is closely related to

[1] frequency

[2] intensity

- [3] loudness
- [4] amplitude

Q.19) Transformer is a device to

- [1] store charges.
- [2] convert high alternating voltage to low one and vice-versa.
- [3] generate electricity.
- [4] convert mechanical energy to electrical energy.

Q.20) Find the current through the circuit if 2Ω and 3Ω resistors are connected in series with 5 volt battery.

- [1] 0 A
- [2] 1 A
- [3] 5 A
- [4] 30 A

Q.21) $1s^2 2s^2 2p^6 3s^2 3p^6$ is the electronic configuration of element

- [1] Ne
- [2] Ar
- [3] Cr
- [4] Cu

Q.22) Na_2SO_4 solution is

- [1] acidic
- [2] basic
- [3] neutral
- [4] alkaline

Q.23) Halogens belong to

- [1] group IVA
- [2] period 7
- [3] block p
- [4] None

Q.24) Valency of nitrogen in ammonia is

- [1] 3

[2] 5

[3] 7

[4] 1

Q.25) The symbol of silver is

[1] Ar

[2] Au

[3] Ag

[4] S

Q.26) What is dry ice?

[1] Frozen O₂

[2] Frozen CO₂

[3] Frozen N₂

[4] Frozen Cl₂

Q.27) The liquid metal is

[1] Fe

[2] Hg

[3] Br

[4] Zn

Q.28) The molecular formula of Ethane is

[1] C₂H₆

[2] CH₄

[3] C₂H₂

[4] C₃H₈

Q.29) 1 mole of NH₃ contains _____ number of NH₃ molecules.

[1] 6.023×10^{20}

[2] 6.023×10^{21}

[3] 6.023×10^{22}

[4] 6.023×10^{23}

Q.30) When a number of small units are heated, they attach to form a large molecular compound.

This is called _____.

- [1] Polymerization
- [2] Neutralization
- [3] Attachment
- [4] Displacement

Q.31) NPK fertilizers do not contain

- [1] Nitrogen
- [2] Potassium
- [3] Phosphorus
- [4] Krypton

Q.32) Functional group of alcohol is

- [1] -O-
- [2] -OH
- [3] -COOH
- [4] -CHO

Q.33) Glycerol is

- [1] Ethanol
- [2] Trihydric alcohol
- [3] inorganic compound
- [4] another name of phenol

Q.34) Bauxite is the main ore of

- [1] Iron
- [2] Copper
- [3] Aluminum
- [4] Silver

Q.35) Which is the sure test of ammonia?

- [1] A burning matchstick extinguishes when inserted in the gas jar.
- [2] A moist blue litmus paper changes to red.
- [3] A moist red litmus paper changes into blue.
- [4] It has soft and pleasant smell.

Q.36) Molecular weight of carbon dioxide is

- [1] 17
- [2] 12
- [3] 36
- [4] 44

Q.37) Which of the following is nitride radical?

- [1] $\text{N}^{\cdot\cdot\cdot}$
- [2] NO_2^-
- [3] NO_3^-
- [4] NH_4^+

Q.38) pH of acid is

- [1] 7
- [2] >7
- [3] <7
- [4] 14

Q.39) In the preparation of oxygen from potassium chlorate, MnO_2 is

- [1] promoter
- [2] catalyst
- [3] reactant
- [4] product

Q.40) $\text{Zn} + \text{HCl} \rightarrow \text{ZnCl}_2 + \text{H}_2$ This is an example of _____.

- [1] Decomposition reaction
- [2] Displacement reaction
- [3] Neutralization reaction
- [4] Combination reaction

Q.41) What is the defect caused by the hypo secretion from beta cells pancreas?

- [1] Gigantism
- [2] Diabetes Mellitus
- [3] Goiter
- [4] Tetany

Q.42) Begonia and Bryophyllum reproduce vegetatively by means of

- [1] Leaf
- [2] Stem
- [3] Flower
- [4] Root

Q.43) How many pairs of traits were chosen by Mendel for his experiment on *Pisum sativum*?

- [1] 2 pairs
- [2] 3 pairs
- [3] 5 pairs
- [4] 7 pairs

Q.44) Turner syndrome is due to

- [1] extra copy of 21st chromosome
- [2] copy of X chromosome
- [3] missing of X chromosome
- [4] copy of Y chromosome

Q.45) Which is incorrect among the following?

- [1] Normal human heart beat is 72 times a minute.
- [2] Left atrium receives oxygenated blood.
- [3] Tricuspid valve is present between right atrium and right ventricle.
- [4] Tricuspid valve is also called mitral valve.

Q.46) Yeast reproduces by

- [1] Fission
- [2] Budding
- [3] Sporulation
- [4] Fragmentation

Q.47) Who is the father of binomial nomenclature system?

- [1] C. Linnaeus
- [2] R.H. Whittaker
- [3] L. Pasteur
- [4] A.V. Leeuwenhoek

Q.48) What era is called the era of mammals?

- [1] Mesozoic era
- [2] Paleozoic era
- [3] Cenozoic era
- [4] Precambrian era

Q.49) What is the process of conversion of free atmospheric nitrogen into nitrides and nitrates called?

- [1] Nitrogen fixation
- [2] Nitrification
- [3] Ammonification
- [4] Denitrification

Q.50) Common cold is caused by

- [1] Retro virus
- [2] Bacteria
- [3] Rhino virus
- [4] Amoeba

Q.51) What is the unit of Corolla called?

- [1] carpel
- [2] sepal
- [3] petal
- [4] petiole

Q.52) Which cell organelle is called the energy mill of cell?

- [1] Nucleus
- [2] Vacuole
- [3] Mitochondria
- [4] Chloroplast

Q.53) Wrigglers are the larva of _____.

- [1] Honey bee
- [2] Silk worm
- [3] Mosquito
- [4] Housefly

Q.54) Plants which grow in the water are called

- [1] xerophytes
- [2] mesophytes
- [3] halophytes
- [4] hydrophytes

Q.55) The branch of biology dealing with the study of fossils is called

- [1] phytology
- [2] paleontology
- [3] ophiology
- [4] herpetology

Q.56) If $x^2 + y^2 = 8$ and $xy = 4$, find the average value of x and y?

- [1] 2
- [2] 4
- [3] 6
- [4] 8

Q.57) Which of the following has largest magnitude?

- [1] $\sqrt{5}$
- [2] $\sqrt[3]{125}$
- [3] $\sqrt[4]{16}$
- [4] $\sqrt[3]{27}$

Q.58) $\vec{a} = 2\vec{i} + 3\vec{j}$ and $\vec{b} = x\vec{i} - \vec{j}$ If these two vectors are perpendicular to each other, find the value of x.

- [1] -3/2
- [2] 2/3
- [3] -2/3
- [4] 3/2

Q.59) The tangent in the circle is any line that touches

- [1] single point
- [2] two points
- [3] many points
- [4] never touches the curve

Q.60) By selling watch for Rs. 4500 a dealer losses 10%. At what price should he sell so as to gain 10%?

- [1] 4500
- [2] 5000
- [3] 5050
- [4] 5500

Q.61) What is the area of rectangle whose length is twice its breadth and whose perimeter is equal to that of a square of unit area?

- [1] $\frac{2}{3}$
- [2] $\frac{4}{3}$
- [3] $\frac{8}{9}$
- [4] 6

Q.62) If $a + b = 10$, $b + c = 9$ and $a + c = 5$, find the arithmetic mean of a , b and c .

- [1] 3
- [2] 4
- [3] 5
- [4] 6

Q.63) If $x = a\sin\theta$ and $y = a\cos\theta$, find the value of $x^2 + y^2$.

- [1] r
- [2] r^2
- [3] $\frac{1}{r}$
- [4] 1

Q.64) Find if $\sin\theta \cdot \cos\theta \cdot \operatorname{cosec}^2\theta = \tan\theta$

- [1] $\frac{\pi}{6}$
- [2] $\frac{\pi}{4}$
- [3] $\frac{\pi}{3}$
- [4] $\frac{\pi}{2}$

Q.65) If $X \cup \{3,4\} = \{1,2,3,4,5\}$, which is true?

- [1] smallest set $X = \{1,2,3\}$
- [2] smallest set $X = \{1,2,5\}$
- [3] greatest set $X = \{1,2,3\}$
- [4] greatest set $X = \{1,3,4,5\}$

Q.66) Which one of the following is the multiplicative inverse of $-a$?

- [1] a
- [2] $-a$
- [3] $-1/a$
- [4] $1/a$

Q.67) If $p(x) = 4x - 6$ and $p(a) = 0$, then $a = \dots\dots$

- [1] $2/3$
- [2] $3/2$
- [3] $-3/2$
- [4] -6

Q.68) If three sides of a triangle are $1, \sqrt{3}, 2$ then the smallest angle of the triangle is $\dots\dots$

- [1] 15°
- [2] 30°
- [3] 45°
- [4] 60°

Q.69) Two cards are drawn one after another from a regular deck of 52 cards with replacement. What is the probability that the cards will be an ace and a 10?

- [1] $\frac{1}{52}$
- [2] $\frac{2}{13}$
- [3] $\frac{8}{13}$
- [4] $\frac{4}{13}$

Q.70) If $y = \begin{bmatrix} 1 & a \\ 0 & 1 \end{bmatrix}$ and $3y - \begin{bmatrix} 2 & 3 \\ 0 & 2 \end{bmatrix} = \begin{bmatrix} 1 & 3 \\ 0 & 1 \end{bmatrix}$ then the value of a is

- [1] 0
- [2] 2
- [3] -2
- [4] 3

Q.71) By how much the area of sphere is changes when its radius is doubled?

- [1] 100%

[2] 200%

[3] 300%

[4] 800%

Q.72) The area of triangle formed by the line $2x + 3y = 12$ with the co-ordinate axes is

[1] 3

[2] 6

[3] 12

[4] 24

Q.73) The point of concurrency of three internal angles bisectors of a triangle is called

[1] Orthocentre

[2] Circumcentre

[3] Incentre

[4] Excentre

Q.74) The distance between the lines $3x + 4y = 6$ and $6x + 8y = 15$ is

[1] 6

[2] $3/2$

[3] $3/10$

[4] $7/9$

Q.75) If $\tan\alpha = 1/2$, $\tan\beta = 1/3$, then $\alpha + \beta$ is equal to

[1] $\pi/2$

[2] $\pi/3$

[3] $\pi/4$

[4] $\pi/6$

Q.76) My sister had a maid _____ in the kitchen.

[1] work

[2] to work

[3] worked

[4] working

Q.77) He is to invite us. In other words,

[1] He invited us.

[2] We are invited by him.

[3] We are to be invited by him.

[4] We are being invited.

Q.78) No one called me, _____?

[1] did one

[2] do one

[3] do they

[4] did they

Q.79) If I _____ my job, I'd start my own business.

[1] lose

[2] lost

[3] have lost

[4] had lost

Q.80) He, along with his family, _____.

[1] arrives

[2] arrived

[3] has arrived

[4] arrive

Q.81) My doctor has a private _____.

[1] practise

[2] practice

[3] practised

[4] practiced

Q.82) The twins are _____.

[1] like

[2] unlike

[3] alike

[4] likely

Q.83) She arrived late in the class _____ a traffic jam.

[1] as

- [2] because
- [3] since
- [4] because of

Q.84) She is fond _____ eating pancakes.

- [1] to
- [2] with
- [3] of
- [4] on

Q.85) A person who walks in his sleep:

- [1] soliloquist
- [2] night walker
- [3] thief
- [4] somnambulist

Q.86) The synonym for Herald is

- [1] turmoil
- [2] scarcity
- [3] vague
- [4] broadcast

Q.87) Portuguese is quite _____ Spanish

- [1] similar
- [2] similar to
- [3] similar as
- [4] similar from

Q.88), the way some animals are coloured or shaped so they can not be seen in their natural surroundings.

- [1] camouflage
- [2] camoflage
- [3] kamoflage
- [4] kamouflage

Q.89) The indirect speech of: The teacher said, "Be quiet boys."

- [1] The teacher said that the boys should be quiet.
- [2] The teacher called the boys and told them to be quiet.
- [3] The teacher urged the boys to be quiet.
- [4] The teacher ordered the boys to be quiet.

Q.90) They to England by July.

- [1] will fly
- [2] will be flying
- [3] will have flown
- [4] may fly

Read the Passage given below.

Computers are capable of doing extremely complicated work in all branches of learning. They can solve the most complex mathematical problems or put thousand unrelated data in order. These machines can be put to varied uses. For instance, they can provide information on the best way to prevent traffic accidents. They work accurately and at high speed. They save research workers' years of hard work. This whole process by which machines can be used to work for us has been called 'automation'. In future automation may enable human beings to enjoy more leisure than they do today. The coming of automation is bound to have important social consequences.

Some years ago, an expert on automation, Sir Leon pointed out that it was a mistake to believe that these machines could think. There is no possibility that human beings will be controlled by machines. Though computers are capable of learning from their mistakes and improving on their performances, they need detailed instructions from human beings to be able to operate. They can never lead independent lives or rule the world by taking decisions of their own.

Sir Leon said that in future, computers would be developed which would be small enough to be carried in one's pocket. Ordinary people would then be able to use them to obtain valuable information. Computers could be plugged into a wireless network and can be used like radios. For instance, people, going on holiday, could be informed about weather conditions. Car drivers can be given an alternative route, when there is a traffic jam. It will also be possible to make tiny translating machines. This will enable people, who do not share a common language, to talk to each other without any difficulty or to read foreign publications.

It is impossible to assess the importance of a machine of this sort, for many international misunderstandings are caused simply due to our failure to understand each other. Computers will also be used in ordinary public hospitals. By providing a machine with a patient's systems, a doctor will be able to diagnose the nature of his illness. Similarly, machines could be used to keep a check on a patient's health record and bring it up to date. Doctors will, therefore, have immediate access to great many facts which will help them in their work. Bookkeepers and accountants too could be relieved of dull clerical work. For the tedious task of compiling and checking lists of figures could be done entirely by machines. Computers are the most efficient servant man has ever had and there is no limit to the way they can be used to improve our lives.

Answer the following questions by choosing the most appropriate options:

Q.91) Write out the correct option:

- [1] There is no possibility that human beings can be on their own with no need of machines.
- [2] Human beings are likely to be controlled by machines one day.
- [3] There is no possibility that human beings will ever be controlled by machines.
- [4] Machines can replace humans.

Q.92) Write out the correct option:

- [1] Computers can solve only certain mathematical problems.
- [2] Computers can't solve any mathematical problems.
- [3] Computers can solve the most complex mathematical problems.
- [4] Computers can solve only simple mathematical problems.

Q.93) Computers can be used to

- [1] to find treatment for the patient's illness.
- [2] to prescribe a medicine for the patient.
- [3] to diagnose the nature of patient's illness.
- [4] to keep the patient in good mood.

Q.94) Many international misunderstandings are caused due to our failure to understand

- [1] ourselves.
- [2] other nations.
- [3] our friends.
- [4] each other.

Q.95) The verb form of the word 'alternative' is

- [1] alternate
- [2] alter
- [3] late
- [4] elate

Q.96) How many districts are there in province no. 1?

- [1] 8
- [2] 12
- [3] 14
- [4] 16

Q.97) What is the capital city of Denmark?

- [1] Berlin
- [2] Zagreb
- [3] Copenhagen
- [4] Vienna

Q.98) What is the full form of GPS?

- [1] General Pocket System
- [2] Global Positioning System
- [3] General Positioning Service
- [4] Global Pocket Service

Q.99) Find the missing one.

2 , 5 , 10 , 17 , ?

- [1] 20
- [2] 23
- [3] 25
- [4] 26

Q.100) I. Increase : : II : Descend

I. (A) Grow (B) Decrease (C) Rise (D) Price

II. (P) Reduce (Q) Down (R) Ascend (S) Mountain

- [1] AQ
- [2] AR
- [3] BR
- [4] CP