

Model Test Paper
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(B. Tech. Biotechnology)
Biology Background candidate

Q.1. Dimensional formula for force is

- (a) MLT^2
- (b) ML^{-1}
- (c) MT^{-2}
- (d) ML

Q.2- On decreasing the temperature of a liquid its rate of evaporation

- (a) increases
- (b) decreases
- (c) first increases and then decreases
- (d) remains unaffected

Q.3. Bernoulli's theorem is based upon

- (a) conservation of energy
- (b) conservation of charge
- (c) conservation of momentum
- (d) none of these

Q.4. In an isochoric process

- (a) temperature remains constant
- (b) pressure remains constant
- (c) volume remains constant
- (d) no exchange of heat takes place

Q.5. Temperature of two bodies are T_1 and T_2 . If they are in thermal equilibrium then

- (a) $T_1 \gg T_2$
- (b) $T_1 > T_2$
- (c) $T_1 < T_2$
- (d) $T_1 = T_2$

Q.6. Of the following cases, velocity of sound at 30° will be least through

- (a) N_2
- (b) O_2
- (c) SO_2
- (d) CO_2

Q.7. Two tuning forks have the frequencies 512 Hz and 516 Hz. Number of beats produced by these forks per second will be

- (a) 1028
- (b) 4
- (c) $1/4$
- (d) $1/1028$

Q.8. Matter waves are

- (a) mechanical waves
- (b) electromagnetic waves
- (c) quantum mechanical waves
- (d) none of these

Q.9. A man is sitting on a revolving stool with his arms outstretched. When he pulls his arms suddenly inside then

- (a) his angular velocity decreases
- (b) his moment of inertia decreases
- (c) his angular velocity remains constant
- (d) his angular momentum increases

Q. 10. A p-type crystal is

- (a) positive
- (b) negative
- (c) neutral
- (d) may be positive or negative

Q. 11. The resistance of a wire is R . If the length of the wire is doubled, then its resistance will be

- (a) $2R$
- (b) $4R$
- (c) $8R$
- (d) $16R$

Q. 12. Diamagnetism exist in the substances on account of

- (a) paired electrons
- (b) unpaired electrons
- (c) presence of protons
- (d) presence of domains

Q. 13. You are given a wire of length 50 cm and battery of negligible resistance. In which case the maximum amount of Heat is generated ?

- (a) when the wire is connected across the battery directly
- (b) when the wire is divided into two parts and both the parts are connected across the battery in parallel
- (c) when wire is divided into four parts and all the parts are connected across battery in parallel
- (d) None of these

Q. 14. The temperature of the sun is measured with

- (a) platinum resistance thermometer
- (b) gas thermometer
- (c) vapour pressure thermometer
- (d) pyrometer

Q.15. For the production of x-rays of wavelength 0.1 Å, the minimum potential difference will be

- (a) 12.4KV
- (b) 124 KV
- (c) 6.2 KV
- (d) 62 KV

Q.16. If the elements of $n > 4$ were not exist in nature, then possible number of elements in nature were

- (a) 60
- (b) 32
- (c) 4
- (d) 64

Q.17. An electron in an atom ($Z = 4$) is in first energy state. The ionization energy of the atom will be

- (a) 0 eV
- (b) - 13.6 eV
- (c) 13.6 eV
- (d) 217.6 eV

Q.18. Bohr's Quantum condition is (where I is moment of inertia and ω is angular velocity)

- (a) $I\omega = 2\pi/nh$
- (b) $I\omega = nh/2\pi$
- (c) $I\omega^2 = nh/2\pi$
- (d) $I\omega = nh/4\pi$

Q.19. N equal resistors are first connected in series and then connected in parallel. Ratio of maximum to the minimum resistance is

- (a) N
- (b) N^2
- (c) $1/N^2$
- (d) $1/N$

Q.20. Which of the following is true in case of longitudinal stationary waves?

- (a) variation in pressure and density is maximum at nodes
- (b) variation in pressure is maximum and \square variation in density is minimum at nodes
- (c) variation in pressure and density is \square minimum at nodes
- (d) variation in pressure is minimum and \square variation in density is maximum at Nodes

Q.21. Kidney is for

- (a) Respiration
- (b) Excretion
- (c) Photosynthesis
- (d) All

Q.22. Sweat glands are present in

- (e) Skin
- (b) Connective tissue
- (c) Mouth
- (d) None

Q.23. Human heart has

- (a) One chamber
- (b) Two chamber
- (c) Three chamber
- (d) Four chamber

Q.24. Cones are present in

- (c) Cornea
- (d) Retina
- (c) Eye lens
- (d) Ear

Q.25. Cell which transport gas in human body

- (a) Erythrocytes
- (b) Leucocytes
- (c) Platelets
- (d) All

Q.26. Artery is a blood vessel which

- (a) Carries blood from heart to body tissue
- (b) Carries blood from body tissue to heart
- (c) a+b
- (d) None

Q.27. Enzyme that act on starch is

- (a) Amylase
- (b) Pepsin
- (c) Trypsin
- (d) Lipase

Q.28. Myoglobin is present in

- (a) Muscle cell
- (b) Red blood cell
- (c) White blood cell
- (d) All

Q.29. Osteocytes are present in

- (a) Bone
- (b) Cartilage
- (c) Muscle cells
- (d) None

Q.30. Nissl's bodies are present in

- (a) Neuron
- (b) Neutrophils
- (c) Sperm cell
- (d) Skeletal muscle cell

Q.31. Large Blood vessel carrying oxygenated blood is
(a) Aorta
(b) Anterior vena cava
(c) Posterior vena cava
(d) b+c

Q.32. Ear bones are present in
(a) Outer ear
(b) Middle ear
(c) Inner ear
(d) Every where

Q.33. Bone joints to bone through
(a) Tendon
(b) Ligament
(c) Adipose cells
(d) Cartilage

Q.34. Which part of eye is avascular (without blood supply)
(a) Cornea
(b) Eye lens
(c) Retina
(d) None

Q.35. Body parts made of keratin are
(a) Hairs
(b) Nails
(c) Outermost layer of skin
(d) All

Q.36. Skin colour is due to
(a) Chlorophyll pigment
(b) B complex
(c) Melanin pigment
(d) All.

Q.37. Cervical vertebrae in human are
(a) 7
(b) 8
(c) 6
(d) 4

Q.38. Chlorophyll containing cells performs
(a) Respiration
(b) Photosynthesis
(c) a + b
(d) None

Q.39. Sugar present in DNA is
(a) Ribose
(b) deoxy ribose
(c) Sucrose
(d) Glucose

Q.40. Bacteriophage is a
(a) Virus
(b) Bacteria
(c) Plant
(d) Algae

Q.41. Cellulose is a
(a) Complex carbohydrate
(b) Polysaccharide
(c) Component of plant cell wall
(d) All

Q.42. Blue green algae is a
(a) Bacteria
(b) Algae
(c) Cyno bacteria
(d) Archae bacteri

Q.43. Role of xylem in plant
(a) Absorption of water
(b) Absorption of minerals
(c) a + b
(d) None

Q.44. In plant cell sap is present in
(a) Vacuole
(b) Cytoplasm
(c) Nucleus
(d) Cell wall

Q.45. Phloem is composed of
(a) Sieve tubes
(b) Companion cells
(c) Tracheid's
(d) a+b

Q.46. Cotton fibre is made of
(a) Cellulose
(b) Starch
(c) Amino acids
(d) Glucose

Q.47. Mesophyll cells are present in

- (a) Roots
- (b) Stem
- (c) Leaves
- (d) None

Q.48. Root hairs are

- (a) Unicellular
- (b) Multi cellular
- (c) Both
- (d) None

Q.49. Xanthophyll is a

- (a) Green pigment
- (b) Yellow pigment
- (c) Red pigment
- (d) White pigment

Q.50. Pith in plant is

- (a) Present in dicot stem
- (b) Monocot stem
- (c) Both
- (d) None

Q.51. Vascular bundle in dicot stem are

- (a) In ring form
- (b) Scattered
- (c) a+c
- (d) In groups

Q.52. Wood is actually

- (a) Primary xylem
- (b) Secondary xylem
- (c) Secondary phloem
- (d) None of the above

Q.53. Xylem and phloem are in separate bundles present in\

- (a) Root
- (b) Stem
- (c) Leaves
- (d) All

Q.54. In the ripe mango which part is sweet and edible

- (a) Epicarp
- (b) Mesocarp
- (c) Endocarp
- (d) Seed

Q.55. Na ion is?

- (a) Smaller than Na
- (b) Larger than Na
- (c) Equal to Na
- (d) None

Q.56. The general electronic configuration of alkaline earth metals is?

- (a) ns1
- (b) ns2
- (c) np1 ns2
- (d) np2

Q.57. The ionization energy from Li to Cs?

- (a) Decreases
- (b) Increases
- (c) Remains same
- (d) None of the above

Q.58. The order of elements in group IA is?

- (a) Na, K, Rb, Cs, Li
- (b) Li, Na, K, Rb, Cs
- (c) Li, K, Na, Rb, Cs
- (d) Li, Na, K, Cs, Rb

Q.59. Sodium Carbonate is commonly known as?

- (a) Baking soda
- (b) Caustic soda
- (c) Lime Soda
- (d) Washing Soda

Q.60. Bleaching powder is generally expressed as?

- (a) CaOCl₂
- (b) CaCl₂
- (c) CaSO₄
- (d) CaSO₄ · 2H₂O

Q.61. The tendency of an atom to attract shared pair of electron toward itself is called?

- (a) Electronegativity
- (b) Electropositivity
- (c) Ionization energy
- (d) Electron affinity

Q.62. The size of anion is always _____ than the parent atom.

- (a) Smaller
- (b) Larger
- (c) V.V. small
- (d) None of the above

Q.63. The total number of electrons in the outermost shell of p-block elements varies from?

- (a) 1 to 6
- (b) 3 to 8
- (c) 2 to 6
- (d) 1 to 8

Q.64. Dry ice is?

- (a) Solid water
- (b) Solid CO₂
- (c) Solid CO
- (d) Solid benzene

Q.65. The brown ring test is used to determine the presence of?

- (a) Carbonate
- (b) Chloride
- (c) Nitrate
- (d) Sulphite

Q.66. Choose the appropriate Antonym of '*Undertaking*'

- (a) Resignation
- (b) Trial
- (c) Refusal
- (d) Denial

Q.67. Choose the appropriate Antonym of '*Sympathy*'

- (a) Enmity
- (b) Cruelty
- (c) Abhorrence
- (d) Apathy

Q.68. Choose the appropriate Antonym of *Host*'

- (a) Arranger
- (b) Visitor
- (c) Manager
- (d) Entertainer

Q.69. Choose the appropriate Synonym of '*ABASH*'

- (A) Strike
- (b) Deduct
- (c) Forsake
- (d) Confound

Q.70. Choose the appropriate Synonym of '*HARASS*'

- (a) rave
- (b) shelter
- (c) torment
- (d) pierce

Q.71. Choose the appropriate Synonym of '*Ghastly*'

- (a) Terrible
- (b) Pleasant
- (c) Pretty
- (d) Sanction

Q.72. Choose the letter of the correctly spelt word.

- (a) pernicious
- (b) parnicious
- (c) pernishes
- (d) pemecious

Q.73. Choose the letter of the correctly spelt word.

- (a) marrygible
- (b) marriageable
- (c) marriagable
- (d) marriageable

Q.74. Choose the most suitable **One Word-** '*A workman who fits and repairs pipes*'

- (a) Mechanic
- (b) Blacksmith
- (c) Plumber
- (d) Technocrat

Q.75. Choose the most suitable **One Word-** '*Study of books in regard to their outward form, authors, subjects, editions, etc.*'

- (a) autobiography
- (b) biography
- (c) bibliography
- (d) philately

Q.76. Fill in the blank selecting correct **Preposition** from the alternatives given below sentence -

He aspires.....the post of a professor.

- (a) about
- (b) for
- (c) to
- (d) on

Q.77. Fill in the blank selecting correct **Preposition** from the alternatives given below sentence -

I do not know how to manage four hundred francs.

- (a) with
- (b) without
- (c) by
- (d) for

Q.78. Fill in the blank selecting correct **Preposition** from the alternatives given below sentence -

'I am fondvegetables.'

- (a) into
- (b) since
- (c) of
- (d) for

Q.79. Fill in the blank with a suitable **Article**
'The man is.....social animal.'

- (a) a
- (b) an
- (c) the
- (d) None of these

Q.80.Fill in the blank with a suitable **Article**
'Mohan gave me..... useful book.'

- (a) a
- (b) an
- (c) the
- (d) None of these

Q.81. Fill in the blank with a suitable **Article:**
'Cold on Himalayas is terrible.'

- (a) a
- (b) an
- (c) the
- (d) None of these

Q.82. Fill in the blank with a suitable **Article:**
..... Taj is an historical building.

- (a) A
- (b) An
- (c) The
- (d) None of the above

Q.83.Complete the sentence:
All of us should abide _____ the laws of our country.

- (a) on
- (b) to
- (c) by
- (d) in

Q.84. **Fill in the blank:**
Vaccination will make people immune certain diseases for a given period.

- (a) against
- (b) to
- (c) with
- (d) for
- (e)

Q.85.**Direction:** In this section has a sentence with three **Bold** part labelled (A), (B) and (C). Read each sentence to find out whether there is any error in any **bold** part and indicate your response in the Answer Sheet against the corresponding letter *i. e.*, (A) or (B) or (C). If you find no error, your response should be indicated as (D).

- (a) She said that **she was under standing (A)**
- (b) **his point of view (B)**
- (c) **very well. (C)**
- (d) **No error (D)**

Q.86. **Direction:** In this section has a sentence with three **Bold** part labelled (A), (B) and (C). Read each sentence to find out whether there is any error in any **bold** part and indicate your response in the Answer Sheet against the corresponding letter *i.e.*, (A) or (B) or (C). If you find no error, your response should be indicated as (D).

- (a) **All the houses having been washed away (A)**
- (b) **by the floods, (B)**
- (c) **the villagers sought shelter in the panchayat office (C)**
- (d) **No error (D)**

Q. 87. **Directions :** *Select from the lettered word or sets of words, the word or words which best complete the meaning of the statement as a whole.*

His.....nature will aid him in attaining success in this difficult job.

- (a) imitative
- (b) lackadaisical
- (c) persevering
- (d) rotund

Q. 88. **Directions :** *Select from the lettered word or sets of words, the word or words which best complete the meaning of the statement as a whole.*

Since he is a teacher of English, we would not expect him to be guilty of a _____

- (a) solecism
- (b) schism
- (c) stanchion
- (d) freshet

Q. 89. **Choose the letter of the correctly spelt word.**

- (a) ignominus
- (b) ignominous
- (c) ignominious
- (d) ignomanius

**Q. 90. One Would expect a serf
to _____ a lord**

- (a) arrogate
- (b) apprise
- (c) circumscribe
- (d) truckle
