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FREE eBook

100 SCIENCE Questions For TNPSC Preliminary Exam

FOR TNPSC EXAM

100 Science Questions for TNPSC Group 2 Exam

1. A solution turns red litmus blue; its pH is likely to be

A. 1
B. 4
C. 5
D. 10

Answer: D

2. A solution reacts with crushed eggshells to give a gas that turns lime-water milky.
The solution contains

A. NaCl
B. HCl
C. LiCl
D. KCl

Answer: B

3. 10 mL of a solution of NaOH is found to be completely neutralized by 8 mL of a given solution of HCl. If we take 20 mL of the same solution of NaOH, the amount HCl solution (the same solution as before) required to neutralize it will be

A. 4 mL
B. 8 mL
C. 12 mL
D. 16 mL

Answer: D

4. Which one of the following types of medicines is used for treating indigestion?

A. Antibiotic
B. Analgesic
C. Antacid
D. Antiseptic

Answer: C

5. What happens when a solution of an acid is mixed with a solution of a base in a test tube?

(i) The temperature of the solution increases
(ii) The temperature of the solution decreases
(iii) The temperature of the solution remains the same
(iv) Salt formation takes place

A. (i) only
B. (i) and (iii)
C. (ii) and (iii)
D. (i) and (iv)

Answer : D

6. An aqueous solution turns red litmus solution blue. Excess addition of which of the following solution would reverse the change?

A. Baking powder
B. Lime
C. Ammonium hydroxide solution
D. Hydrochloric acid

Answer: D

7. During the preparation of hydrogen chloride gas on a humid day, the gas is usually passed through the guard tube containing calcium chloride. The role of calcium chloride taken in the guard tube is to

A. absorb the evolved gas
B. moisten the gas
C. absorb moisture from the gas
D. absorb Cl^- ions from the evolved gas

Answer : C

8. Which of the following substance will not give carbon dioxide on treatment with dilute acid?

A. Marble
B. Limestone
C. Baking soda
D. Lime

Answer : D

9. Which of the following is not a mineral acid?

A. Hydrochloric acid
B. Citric acid
C. Sulphuric acid
D. Nitric acid

Answer : B

10. Which among the following is not a base?

A. NaOH
B. KOH
C. NH_4OH
D. C_2H_5OH

Answer: D

11. Which one of the following elements exhibit maximum number of valence electrons?

A. Na
B. Al
C. Si
D. P

Answer: D

12. Which of the following gives the correct increasing order of the atomic radii of O, F and N?

A. O, F, N
B. N, F, O
C. O, N, F
D. F, O, N

Answer: D

13. Which among the following elements has the largest atomic radii?

A. Na
B. Mg
C. K
D. Ca

Answer: D

14. Which of the following elements would lose an electron easily?

A. Mg
B. Na
C. K
D. Ca

Answer: C

15. Which of the following elements does not lose an electron easily?

A. Na
B. F
C. Mg
D. Al

Answer: B

16. Which of the following are the characteristics of isotopes of an element?

(i) Isotopes of an element have same atomic masses
(ii) Isotopes of an element have same atomic number
(iii) Isotopes of an element show same physical properties
(iv) Isotopes of an element show same chemical properties

A. (i), (iii) and (iv)
B. (ii), (iii) and (iv)
C. (ii) and (iii)
D. (ii) and (iv)

Answer: D

17. Carbon exists in the atmosphere in the form of

A. carbon monoxide only
B. carbon monoxide in traces and carbon dioxide
C. carbon dioxide only
D. coal
Answer : C

18. Which of the following statements are usually correct for carbon compounds? These

(i) are good conductors of electricity
(ii) are poor conductors of electricity
(iii) have strong forces of attraction between their molecules
(iv) do not have strong forces of attraction between their molecules

A. (i) and (iii)
B. (ii) and (iii)
C. (i) and (iv)
D. (ii) and (iv)

Answer : D

19. A molecule of ammonia (NH_3) has :

A. only single bonds
B. only double bonds
C. only triple bonds
D. two double bonds and one single bond

Answer : A

20. Buckminsterfullerene is an allotropic form of

A. phosphorus

B. sulphur
C. carbon
D. tin

Answer : C
.
21. The ability of metals to be drawn into thin wires is known as

A. Ductility
B. Malleability
C. Sonorousity
D. Conductivity

Answer : A

22. If salivary amylase is lacking in the saliva, which of the following events in the mouth cavity will be affected?

A. Proteins breaking down into amino acids
B. Starch breaking down into sugars
C. Fats breaking down into fatty acids and glycerol
D. Absorption of vitamins

Answer : B

23. The inner lining of the stomach is protected by one of the following from hydrochloric acid. Choose the correct one

A. Pepsin
B. Mucus
C. Salivary amylase
D. Bile

Answer : B

24. Which part of alimentary canal receives bile from the liver?

A. Stomach
B. Small intestine
C. Large intestine
D. Oesophagus

Answer : B

25. A few drops of iodine solution were added to rice water. The solution turned blue-black in colour. This indicates that rice water contains

A. complex proteins
B. simple proteins
C. fats
D. starch

Answer : D

26. In which part of the alimentary canal food is finally digested?

A. Stomach
B. Mouth cavity
C. Large intestine
D. Small intestine

Answer : D

27. Choose the function of the pancreatic juice from the following

A. trypsin digests proteins and lipase carbohydrates
B. trypsin digests emulsified fats and lipase proteins
C. trypsin and lipase digest fats
D. trypsin digests proteins and lipase emulsified fats

Answer : D

28. Posture and balance of the body is controlled by

A. cerebrum
B. cerebellum
C. medulla
D. pons

Answer : B

29. Spinal cord originates from :

A. cerebrum
B. medulla
C. pons
D. cerebellum

Answer : B

30. The movement of shoot towards light is :

A. geotropism
B. hydrotropism
C. chemotropism
D. phototropism

Answer : D

31. The main function of abscisic acid in plants is to

A. increase the length of cells
B. promote cell division
C. inhibit growth
D. promote the growth of stem

Answer : C

32. Which of the following is not associated with the growth of a plant?

A. Auxin
B. Gibberellins
C. Cytokinins
D. Abscisic acid

Answer : D

33. Iodine is necessary for the synthesis of which hormone?

A. Adrenaline
B. Thyroxin
C. Auxin
D. Insulin

Answer : B

34. The correct sequence of reproductive stages seen in flowering plants is

A. gametes, zygote, embryo, seedling
B. zygote, gametes, embryo, seedling
C. seedling, embryo, zygote, gametes
D. gametes, embryo, zygote, seedling

Answer : A

35. The number of chromosomes in parents and offsprings of a particular species remains constant due to

A. doubling of chromosomes after zygote formation
B. halving of chromosomes during gamete formation
C. doubling of chromosomes after gamete formation
D. halving of chromosomes after gamete formation

Answer : B

36. In Rhizopus, tubular thread-like structures bearing sporangia at their tips are called

A. filaments
B. hyphae
C. rhizoids
D. roots

Answer : B

37. Vegetative propagation refers to the formation of new plants from

A. stem, roots, and flowers
B. stem, roots, and leaves
C. stem, flowers, and fruits
D. stem, leaves, and flowers

Answer : B

38. Exchange of genetic material takes place in

A. Vegetative reproduction
B. Asexual reproduction
C. Sexual reproduction
D. Budding

Answer : C

39. Two pink coloured flowers on crossing resulted in 1 red, 2 pink and 1 white flower progeny. The nature of the cross will be

A. Double fertilisation
B. Self-pollination
C. Cross-fertilisation
D. No fertilization

Answer : C

40. A cross between a tall plant (TT) and short pea plant (tt) resulted in progeny that were all tall plants because :

A. tallness is the dominant trait
B. shortness is the dominant trait
C. tallness is the recessive trait
D. height of pea plant is not governed by gene 'T' or 't'

Answer : A

41. Which of the following statement is incorrect?

A. For every hormone, there is a gene.
B. For every protein, there is a gene.
C. For the production of every enzyme, there is a

gene.
D. For every molecule of fat, there is a gene

Answer : D

42. If a round, green seeded pea plant (RR yy) is crossed with wrinkled, yellow seeded pea plant, (rr

YY) the seeds produced in the F1 generation are

A. round and yellow
B. round and green
C. wrinkled and green
D. wrinkled and yellow

Answer : A

43. In human males, all the chromosomes are paired perfectly except one. This/these unpaired chromosome is/are :
(i) large chromosome
(ii) small chromosome
(iii) Y-chromosome
(iv) X-chromosome

A. (i) and (ii)
B. (iii) only
C. (iii) and (iv)
D. (ii) and (iv)

Answer : C

44. The maleness of a child is determined by

A. the X chromosome in the zygote
B. the Y chromosome in zygote
C. the cytoplasm of germ cell which determines the sex
D. sex is determined by chance

Answer : B

45. Magnification produced by a rearview mirror fitted in vehicles

A. is less than one
B. is more than one
C. is equal to one
D. can be more than or less than one depending upon the position of the object in front of it

Answer : A

46. Which one of the following metals does not react with cold as well as hot water?

A. Na
B. Ca
C. Mg
D. Fe

Answer: D

47. A full-length image of a distant tall building can definitely be seen by using

A. a concave mirror
B. a convex mirror
C. a plane mirror
D. both concave as well as plane mirror

Answer : B

48. The laws of reflection hold good for

A. plane mirror only
B. concave mirror only
C. convex mirror only
D. all mirrors irrespective of their shape

Answer : D

49. In which of the following, the image of an object placed at infinity will be highly diminished and point sized?

A. Concave mirror only
B. Convex mirror only
C. Convex lens only
D. Concave mirror, convex mirror, concave lens and convex lens

Answer : D

50. Under which of the following conditions a concave mirror can form an image larger than the actual object?

A. When the object is kept at a distance equal to its radius of curvature
B. When an object is kept at a distance less than its focal length
C. When an object is placed between the focus and centre of curvature
D. When an object is kept at a distance greater than its radius of curvature

Answer : C

51. At noon the sun appears white as

A. light is least scattered

B. all the colours of the white light are scattered away
C. blue colour is scattered the most
D. red colour is scattered the most

Answer : B

52. Twinkling of stars is due to atmospheric :

A. dispersion of light by water droplets
B. refraction of light by different layers of varying refractive indices
C. scattering of light by dust particles
D. internal reflection of light by clouds
Answer : B

53. The resistivity does not change if :

A. the material is changed
B. the temperature is changed
C. the shape of the resistor is changed
D. both material and temperature are changed

Answer : C

54. Unit of electric power may also be expressed as :

A. volt-ampere
B. kilowatt-hour
C. watt-second
D. joule second

Answer : A

55. If the current I through a resistor is increased by 100% (assume that temperature remains unchanged), the increase in power dissipated will be :

A.100 %
B. 200 %
C. 300 %
D. 400 %

Answer : C

56. The most important safety method used for protecting home appliances from short-circuiting or overloading is :

A. earthing
B. use of fuse
C. use of stabilizers
D. use of electric meter

Answer : B

57. The magnetic field inside a long straight solenoid-carrying current :

A. is zero.
B. decreases as we move towards its end.
C. increases as we move towards its end.
D. is the same at all points

Answer : A

58. Which of the following property of a proton can change while it moves freely in a magnetic field?

A. mass
B. speed
C. velocity
D. momentum

Answer : D

59. A positively-charged particle (alpha-particle) projected towards west is deflected towards north by a magnetic field. The direction of magnetic field is :

A. towards south
B. towards east
C. downward
D. upward

Answer: D

60. The loudness of sound is measured in units of :

A. Decibel (dB)
B. Hertz (Hz)
C. Metre (m)
D. Metre/Second (m/s)

Answer : A

61. The loudness of sound is determined by the :

A. amplitude of vibration
B. the ratio of amplitude and frequency of vibration
C. frequency of vibration
D. product of amplitude and frequency of vibration

Answer : A

62. Conduction is the method of transfer of heat in:

A. liquids

B. solids
C. gases
D. vacuum

Answer: B

63. If the displacement of an object is proportional to square of time, then the object moves with:

A. Uniform velocity
B. Uniform acceleration
C. Increasing acceleration
D. Decreasing acceleration

Answer: B

64. A particle is moving in a circular path of radius r. The displacement after half a circle would be:

A. Zero
B. πr
C. 2r
D. 2πr

Answer : C

65. Velocity is defined as ..... per unit time.

A. Speed
B. Momentum
C. Acceleration
D. Displacement

Answer: D

66. The disease chikungunya is transmitted by:

A. house fly
B. Aedes mosquito
C. cockroach
D. female Anopheles

Answer: B

67. AIDS is caused by HIV. Among the following, which one is not a mode of transmission of HIV?

A. Transfusion of contaminated blood
B. Sharing the infected needles
C. Shaking hands with infected person
D. Sexual contact with infected persons

Answer: C

68. The organisms which cause diseases in plants and animals are called:

A. Pathogens
B. Vectors
C. Insects
D. Worms

Answer: A

69. The clinical test that is used for the diagnosis of typhoid is:

A. ELISA
B. ESR
C. PCR
D. Widal

Answer: D

70. Minerals are:

A. natural resources.
B. inexhaustible natural resources
C. exhaustible natural resources
D. all of these

Answer: C

71. Petroleum is mainly a mixture of which one of the following class?

A. Carbohydrates
B. Carbogens
C. Hydrocarbons
D. Alcohols
Answer: C

72. Which one of the following is a petrochemical?

A. Ammonia
B. Coke
C. Acetone
D. Paraffin wax

Answer: D

73. Which of the following is biodegradable waste?

A. DDT
B. Aluminium can
C. Cow dung
D. Plastic bag

Answer: C

74. In a food chain, the third trophic level is always occupied by _____.

A. Carnivores
B. Herbivores
C. Decomposers
D. Producers

Answer: A

75. An ecosystem includes:

A. All living organisms
B. Non-living objects
C. Both living organisms and non-living objects
D. Sometimes living organisms and sometimes non-living objects

Answer: C

76. Accumulation of non-biodegradable pesticides in the food chain in increasing amount at each higher trophic level is known as _____.

A. Eutrophication
B. Pollution
C. Biomagnification
D. Accumulation

Answer: C

77. Depletion of ozone is mainly due to _____.

A. Chlorofluorocarbon compounds
B. Carbon monoxide
C. Methane
D. Pesticides

Answer : A

78. Organisms which synthesise carbohydrates from inorganic compounds using radiant energy are called _____

A. Decomposers
B. Producers
C. Herbivores
D. Carnivores

Answer : B

79. In an ecosystem, the 10% of energy available for transfer from one trophic level to the next is in the form of _____.

A. Heat energy
B. Light energy
C. Chemical energy
D. Mechanical energy

Answer: C

80. Organisms of a higher trophic level which feed on several types of organisms belonging to a lower trophic level constitute the _____.

A. Food web
B. Ecological pyramid
C. Ecosystem
D. Food chain

Answer: A

81. Flow of energy in an ecosystem is always _____.

A. Unidirectional
B. Bidirectional
C. Multidirectional
D. No specific direction

Answer: A

82. Which of the following limits the number of trophic levels in a food chain?

A. Decrease in energy at higher trophic levels
B. Sufficient food supply
C. Polluted air
D. Water

Answer: A

83. The percentage of solar radiation absorbed by all the green plants for the process of photosynthesis is about _____.

A. 1 %
B. 5 %
C. 8 %
D. 10 %

Answer: A

84. The decomposers in an ecosystem _____.

A. Convert inorganic material, to simpler forms
B. Convert organic material to inorganic forms
C. Convert inorganic materials into organic compounds
D. Do not breakdown organic compounds

Answer: B

85. If a grasshopper is eaten by a frog, then the

energy transfer will be from _____.

A Producer to decomposer
B. Producer to primary consumer
C. Primary consumer to secondary consumer
D. Secondary consumer to primary consumer

Answer: C

86. Depletion of ozone is mainly due to _____.

A. Chlorofluorocarbon compounds
B. Carbon monoxide
C. Methane
D. Pesticides

Answer: A

87. Which of the statement is incorrect?

A. All green plants and blue-green algae are producers
B. Green plants get their food from organic compounds
C. Producers prepare their own food from inorganic compounds
D. Plants convert solar energy into chemical energy

Answer: B

88. The main cause for abundant coliform bacteria in the river Ganga is:

A. Disposal of unburnt corpses into water
B. Discharge of effluents from electroplating industries
C. Washing of clothes
D. Immersion of ashes

Answer: A

89. Exchange of genetic material takes place in :

A. Vegetative reproduction
B. Asexual reproduction
C. Sexual reproduction
D. Budding

Answer: C

90. A zygote which has an X-chromosome inherited from the father will develop into a _____.

A. Boy
B. Girl
C. X- chromosome does not determine the sex of a child
D. Either boy or girl

Answer: B

91. A trait in an organism is influenced by :

A. Paternal DNA only
B. Maternal DNA only
C. Both maternal and paternal DNA
D. Neither by paternal nor by maternal DNA

Answer: C

92. According to the evolutionary theory, the formation of a new species is generally due to :

A. Sudden creation by nature
B. Accumulation of variations over several generations
C. Clones formed during asexual reproduction
D. Movement of individuals from one habitat to another

Answer: B

93. The number of pair (s) of sex chromosomes in the zygote of humans is:

A. One
B. Two
C. Three
D. Four

Answer: A

94. The theory of evolution of species by natural selection was given by _____.

A. Mendel
B. Darwin
C. Morgan
D. Lamarck

Answer: B

95. Who amongst the following scientists had no contribution in the development of the double helix model for the structure of DNA?

A. Rosalind Franklin
B. Maurice Wilkins
C. Erwin Chargaff
D. Meselson and Stahl

Answer: D

96. The net electric charge on DNA and histones is:

A. Both positive
B. Both negative
C. Negative and positive, respectively
D. Zero

Answer: C

97. In a DNA strand the nucleotides are linked together by :

A. Glycosidic bonds
B. Phosphodiester bonds
C. Peptide bonds
D. Hydrogen bonds

Answer: B

98. Which was the last human chromosome to be completely sequenced?

A. Chromosome 1
B. Chromosome 11
C. Chromosome 21
D. Chromosome x

Answer: A

99. Analogous organs arise due to _____.

A. Divergent evolution
B. Artificial selection
C. Genetic drift
D. Convergent evolution

Answer: D

100. Appearance of antibiotic-resistant bacteria is an example of:

A. Adaptive radiation
B. Transduction
C. Pre-existing variation in the population
D. Divergent evolution

Answer: C