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SREE CHITRA TIRUNAL INSTITUTE FOR MEDICAL SCIENCES & TECHNOLOGY
THIRUVANANTHAPURAM—695 011

ENTRANCE EXAMINATION - ACADEMIC SESSION JANUARY 2019

PROGRAM: PG DIPLOMA IN NEURO TECHNOLOGY 2018

Time:90 Minutes

Max.Marks: 100

(Select the most appropriate answer)
(There are **no negative** marks for wrong answers)

Q1. Astigmatism for a human eye can be removed by using

- a) Concave lens b) Convex lens c) Cylindrical lens d) Prismatic lens

Q2. When light is passed through a prism the colour which deviates least is

- a) Red b) Violet c) Blue d) Green

Q3. A divergent lens will produce

- a) Always virtual image b) Always real image
c) Sometimes real and sometimes virtual image d) None of these

Q4. A convex lens of glass (Refractive index = 1.5) is immersed in water. Compared to its power in air its power in water

- a) Increases b) Decreases c) Remains same d) Nothing can be predicted

Q5. What is the power of a diverging lens of focal length 100cm?

- a) 1D b) -1D c) 0.01D d) -0.01D

Q6. The part in the centre of retina with highest visual acuity is

- a) Red spot b) Blind spot c) Sclera d) Yellow spot

Q7. The convex lens is used in

- a) Microscope b) Telescope c) Projector d) All the above

Q8. When light is reflected from a mirror a change occurs in its

- a) Phase b) Frequency c) Wavelength d) Speed

Q9. The focal length of spherical mirror is

- a) Maximum for red light b) Maximum for blue light
c) Maximum for white light d) Same for all lights

Q10. A ray is incident at an angle 38° on a mirror, the angle between normal and reflected ray is

- a) 52° b) 38° c) 90° d) 76°

Q11. The only elastic modulus that applies to fluids is

- a) Young's modulus b) Shear modulus c) Bulk modulus d) None of these

Q12. An electric fan is switched 'ON' in a closed room. The air in the room is

- a) Cooled b) Heated
c) Maintains its temperature d) Heated or cooled depending on atmospheric pressure

Q13. If the door of a refrigerator is kept open which of the following is true?

- a) Room is cooled b) Room is heated
c) Room is either cooled or heated d) Room is neither cooled or heated

Q14. The first law of thermodynamics is concerned with the conservation of

- a) Energy b) Momentum c) Mass d) Temperature

Q15. A gas behaves more closely as an ideal gas at

- a) Low pressure and low temperature b) Low pressure and high temperature
c) High pressure and low temperature d) High pressure and low temperature

Q16. A piece of iron is heated in a flame. If first it becomes dull red then becomes reddish yellow and finally turns to white hot. The correct explanation for the above observation is possible by using

- a) Kirchhoff's law b) Newton's Law of cooling
c) Stefan's law d) Wien's displacement law

Q17. The space inside a Coolidge tube should be a

- a) High vacuum b) Filled with high pressure gas
c) Filled with low pressure gas d) None of these

Q18. The apparent change in frequency due to the relative motion between the source and observer is called

- a) Theory of Relativity b) Harmonic waves c) Doppler effect d) Photoelectric effect

Q19. A person standing in front of a mirror finds his image larger than himself. This implicates that the mirror is

- a) Convex b) Parabolic c) Plane d) Concave

Q20. An electron microscope is better than optical microscope because of

- a) More resolving power b) Comfortable use
c) Low purchasing cost d) Observation can be taken quickly

Q21. Cyclohexane is an _____ compound while benzene is an _____ compound.

- a) Alicyclic, Alicyclic b) Alicyclic, Aromatic
c) Aromatic, Alicyclic d) Aromatic, Aromatic

Q22. The separation of the constituents of a mixture by column chromatography depends upon their

- a) Different solubilities b) Different boiling points
c) Different refractive indices d) Differential adsorption

Q23. Camphor is purified by

- a) Distillation b) Vacuum distillation c) Sublimation d) Steam distillation

Q24. Tetrafluoroethene is the monomer of

- a) Rubber b) Teflon c) Rayon d) Silk

Q25. Which among the following is a non- narcotic analgesic?

- a) Aspirin b) Paracetamol c) Morphine d) Both a and b

Q26. Which among the following is not an antibiotic?

- a) Serotonin b) Penicillin c) Ampicillin d) Both b and c

Q27. Tyndall effect is seen in

- a) True solutions b) Colloidal solutions c) Alloys d) None of these

Q28. The principle ore of aluminium is

- a) Haematite b) Cuprite c) Bauxite d) Calamine

Q29. The purest form of iron is

- a) Cast iron b) Pig iron c) Wrought iron d) Steel

Q30. The gas leaked from the storage tank of the union carbide plant in Bhopal gas tragedy was:

- a) Phosgene b) Methylamine c) Ammonia d) Methylisocyanate

Q31. Ozone layer is present in

- a) Troposphere b) Stratosphere c) Mesosphere d) Ionosphere

Q32. Depletion of ozone layer causes

- a) Blood cancer b) Lung cancer c) Skin cancer d) Breast cancer

Q33. Which of the following has greatest affinity for haemoglobin?

- a) CO b) NO c) O₂ d) CO₂

Q34. Isomers which can be interconverted through rotation around a single bond are

- a) Conformers b) Diastereomers c) Enantiomers d) Positional isomers

Q35. Which of the following is not a greenhouse gas?

- a) Methane b) Ozone c) Carbondioxide d) Nitrogen

Q36. Excess nitrate in drinking water can cause

- a) Methemoglobinemia b) Kidney damage c) Laxative effect d) Leucoderma

Q37. The process of 'eutrophication' is due to

- a) Increase in concentration of insecticide in water
b) Increase in concentration of Fluoride ion in water
c) Reduction in concentration of dissolved oxygen in water due to phosphate pollution.
d) Increase in concentration of radioactive substance in water

Q38. Suspension of slaked lime in water is known as

- a) Lime water b) Quick lime c) Milk of lime d) None of these

Q39. What is the colour of flame when Barium salts are heated in Bunsen burner?

- a) Brick red b) Crimson c) Yellow d) Apple green

Q40. The element responsible for the neuromuscular function in the body is

- a) Calcium b) Magnesium c) Potassium d) Manganese

Q41. Which among the following hormone come under the category of steroids?

- a) Insulin b) Cortisol c) Glucagon d) Epinephrine

Q42. Which among the following vitamin help in absorption of calcium from intestinal tracts?

- a) Vitamin A b) Vitamin C c) Vitamin D d) Vitamin K

Q43. The sense of taste is called

- a) Olfaction b) Gustation c) Sensation d) Reception

Q44. The scotopic vision is the function of

- a) Rods b) Cones c) Blind spot d) Iris

Q45. The disease of the eye in which the intraocular pressure is increased is

- a) Astigmatism b) Myopia c) Cataract d) Glaucoma

Q46. The canal that drains the aqueous humor in eye into veins is

- a) External auditory canal b) Eustachian canal c) Schlemm's canal d) None of these

Q47. Clinical method to determine intraocular pressure is called

- a) Ophthalmoscopy b) Tonometry c) Electroretinography d) None of these

Q48. Which part of the ear is responsible for maintaining balance?

- a) Vestibular apparatus b) Organ of corti c) Ear ossicles d) Tympanic membrane

Q49. Which hormone act as biological clock?

- a) Thymosine b) Oxytocin c) Somatostatin d) Melatonin

Q50. Which among the following is an antidiuretic hormone?

- a) Serotonin b) Oxytocin c) Vasopressin d) Thyroxin

Q51. How many parathyroid glands are there in human body?

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

Q52. The newly discovered organ in the human body is

- a) Vesentry b) Tesentry c) Mesentry d) None of these

Q53. The gland which acts as both exocrine and endocrine gland is

- a) Pancreas b) Liver c) Hypothalamus d) Pituitary gland

Q54. A condition where urea accumulates in blood is called

- a) Tetany b) Dialysis c) Arthritis d) Uremia

Q55. How many pairs of floating ribs are there in human body?

- a) One b) Two c) Four d) Six

Q56. The first bone of vertebral column is called

- a) Sacrum b) Axis c) Atlas d) Coccyx

Q57. The only movable bone in the skull is

- a) Mandible b) Maxilla c) Sub mandibular d) Sub maxillary

Q58. The salivary gland located below the tongue is

- a) Sub mandibular b) Sub maxillary c) Parotid d) Sub lingual

Q59. The fastest acting enzyme in the body is

- a) Ribozyme b) Carbonic anhydrase c) DNA helicase d) Amylase

Q60. Most abundant white blood cells is

- a) Monocytes b) Basophils c) Eosinophils d) Neutrophils

Q61. Double helix structure of DNA was discovered by

- a) James Watson b) Francis Crick c) Both a and b d) None of these

Q62. Aqua regia consists of

- a) Nitric acid and Hydrochloric acid b) Sulphuric acid and Hydrochloric acid
c) Nitric acid and Sulphuric acid d) Nitric acid and Carbonic acid

Q63. Which among the following metal is stored in kerosene?

- a) Calcium b) Bromine c) Sodium d) Aluminium

Q64. What is heavy water?

- a) H_2^{18}O b) H_2^{16}O c) H_2O_3 d) D_2O

Q65. Which among the following is used as antiseptic?

- a) Perhydrol b) Chloroxylenol c) Phenol d) All the above

Q66. Bleaching action of Hydrogen peroxide is due to

- a) Reduction b) Oxidation c) Both a and b d) None of these

Q67. German silver is an alloy of

- a) Ni, Zn, Cu b) Cr, Ni, Co c) Argentum, Aurum d) Natrium, Hydragerum

Q68. The study of nomenclature of organisms is called

- a) Hierarchy b) Classification c) Taxonomy d) None of these

Q69. Calcium sulphate dihydrate is commonly known as

- a) Ceramic b) Plaster of Paris c) Washing soda d) Gypsum

Q70. Haemoglobin consists of which metal atom?

- a) Nitrogen b) Iron c) Calcium d) All the above

Q71. Which gland degenerates as human beings approach puberty?

- a) Pineal gland b) Parathyroid gland c) Adrenal gland d) Thymus gland

Q72. Absorption and adsorption is considered as a single process called

- a) Chromatography b) Sorption c) Desorption d) None of these

Q73. Which among the following elements is diamagnetic?

- a) Iron b) Platinum c) Copper d) Oxygen

Q74. The winner of 2017 Nobel prize for chemistry

- a) Joachim Frank b) Richard Henderson c) Jacques Dubochet d) All the above

Q75. 'Meghalaya' is the name given to the region corresponding to

- a) Siachen mountain ranges b) GaroKhasi hills
c) Himalayas d) Satpura Mountain ranges

Q76. Name the desktop software launched by IT Ministry that enables editing to text printed on scanned documents?

- a) GeM b) Digital India c) E-Aksharyan d) Vikaspedia

Q77. Which country has become the world's second largest stock market?

- a) USA b) Japan c) China d) Russia

Q78. Name the new mission launched by India to promote the spirit of entrepreneurship in the country

- a) Startup Academia Alliance Program b) Digilocker
c) GI cloud d) GeM

Q79. Which is the latest version of Google's Android operating system?

- a) Android Marshmallow b) Android Lollipop
c) Android Nougat d) Android Pie

Q80. Who is elected as the new Deputy chairman of Rajya Sabha?

- a) Venkaiah Naidu b) Sumitra Mahajan
c) Nirmala Sitaraman d) Harivansh Narayan Singh

Q81. Functional unit of nervous system is

- a) Myoma b) Myocyte c) Neurons d) Glial cells

Q82. The main ion in nerve conduction is

- a) Na^+ b) Mg^{2+} c) F^- d) Cs^+

Q83. Which neurons can conduct nerve impulses faster?

- a) Unmyelinated neurons b) Myelinated neurons c) Both a and b d) None of these

Q84. Saltatory conduction happens in

- a) Unmyelinated neurons b) Dendrons c) Myelinated neurons d) None of these

Q85. The protective tissue covering brain is

- a) Meninges b) Pleura c) Pericardium d) None of these

Q86. The fluid in which the brain is suspended is

- a) Lymph b) Interstitial fluid c) Cerebrospinal fluid d) None of these

Q87. The part of brain which controls vomiting reflex is

- a) Cerebrum b) Cerebellum c) Pons d) Medulla oblongata

Q88. The Hind brain consists of

- a) Cerebellum b) Medulla c) Both a and b d) None of these

Q89. The master gland present at the base of the brain is

- a) Adrenal gland b) Pituitary gland c) Pineal gland d) All the above

Q90. Junction of two neurons is called

- a) Synapse b) Effector c) Neuromuscular junction d) Dendrite

Q91. Which among the following is a neurotransmitter?

- a) Tubocurarine b) Rocuronium c) Atropine d) Acetylcholine

Q92. The cells which support and provide nutrition to nervous system is

- a) Neurons b) Glial cells c) Myocyte d) Myoma

Q93. Duramater is a part of

- a) Meninges b) Pericardium c) Pleura d) None of these

Q94. Neural signals propagate along the axon in the form of electrochemical waves called

- a) Magnetic flux b) Muscle potential c) Action potential d) None of these

Q95. Knee jerk reflex is controlled by

- a) Spinal cord b) Brain c) Patella d) Heart

Q96. Which technique records the electrical activity of brain?

- a) ECG b) EEG c) MRI d) CT

Q97. Which among the following is not a classification of EEG waves?

- a) Alpha waves b) Beta waves c) Theta waves d) PQRS waves

Q98. Which part of the brain coordinates our muscle movements?

- a) Cerebrum b) Cerebellum c) Medulla oblongata d) None of these

Q99. Specialised cells that can transduce sensory signals to nerve impulses are

- a) Receptors b) Synapse c) Thalamus d) Schwann cells

Q100. Sensory receptors that detect pain are

- a) Osmoreceptors b) Nociceptors c) Mechanoreceptors d) Chemoreceptors

