



श्री चित्रा तिरुनाल आयुर्विज्ञान और प्रौद्योगिकी संस्थान, त्रिवेंद्रम, केरल- 695 011
(एक राष्ट्रीय महत्व का संस्थान, विज्ञान एवं प्रौद्योगिकी विभाग, भारत सरकार)
SREE CHITRA TIRUNAL INSTITUTE FOR MEDICAL SCIENCES AND TECHNOLOGY, TRIVANDRUM
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ENTRANCE EXAMINATION - ACADEMIC SESSION JANUARY 2024

Program: PG Diploma in Neuro Technology

Time:90 Minutes

Max. Marks: 100

(Select the most appropriate answer)

(There are no negative marks for wrong answers)

1	Which cranial nerve is considered an extension of the brain?
a	Olfactory nerve
b	Optic nerve
c	Oculomotor nerve
d	Vagus nerve
2	Exposure to some medicines or toxins during pregnancy can lead to defects in a newborn child. What is this phenomenon called?
a	Ontogeny
b	Oncogenicity
c	Teratogenicity
d	Heterotopy
3	Which cell in peripheral nervous system produces the myelin sheath?
a	Schwann cell
b	Astrocyte
c	Oligodendrocyte
d	Microglia
4	How many vertebrae and pairs of spinal nerves are there in human body?
a	33 vertebrae, 35 pairs of spinal nerves
b	33 vertebrae, 31 pairs of spinal nerves
c	35 vertebrae, 33 pairs of spinal nerves
d	35 vertebrae, 31 pairs of spinal nerves
5	Which of the following is a post-transcriptional modification?
a	Translation
b	Reverse transcription
c	Protein folding
d	Poly-A capping
6	Which of the following viruses is most commonly used in gene therapy in neurological diseases?
a	Herpes virus
b	Enterovirus
c	Picorna virus
d	Adeno associated virus

7	Which of the following cells is a component of innate immunity?	
	a	Natural killer cells
	b	CD4+ T cells
	c	CD8+ T cells
	d	Plasma cells
8	Which of the following diseases is NOT generally transmitted by blood transfusion?	
	a	Hepatitis C
	b	Malaria
	c	Hepatitis E
	d	Hepatitis B
9	Which of the following fungi is a yeast?	
	a	Aspergillus
	b	Mucor
	c	Candida
	d	Penicillium
10	Who proposed the theory of chemical evolution?	
	a	Harding and Fleming
	b	Oparin and Haldane
	c	Hugo de Vries
	d	Jean Baptiste de Lamarck
11	If a genetic disease is present in grandfather, father and son (three successive generations), the inheritance is likely to be which of the following?	
	a	Dominant
	b	Recessive
	c	X-linked
	d	Mitochondrial
12	How many lobes does each hemisphere of a human cerebrum have?	
	a	4
	b	5
	c	6
	d	7
13	What is the lowest category of classification in taxonomy?	
	a	Order
	b	Species
	c	Genus
	d	Kingdom
14	What is the main function of lysosomes?	
	a	Ribosomal transport
	b	Enzymatic degradation of biomolecules
	c	Chromatin condensation
	d	Storage of energy-releasing molecules
15	Which of the following statements is FALSE regarding human red blood cells (RBCs) in circulation?	
	a	RBCs are non-nucleated
	b	Hemoglobin in the RBCs is rich in iron
	c	The half-life of RBCs in circulation is 40 – 80 days
	d	They are more numerous than platelets in circulation

16	Which of the following molecules is a disaccharide?	
	a	Galactose
	b	Glucose
	c	Fructose
	d	Lactose
17	Which of the following gives the fastest immune response?	
	a	Active infection
	b	Vaccination
	c	Passive immunization
	d	Subclinical infection
18	Which of the following is NOT a step in polymerase chain reaction?	
	a	Denaturation
	b	Stabilization
	c	Annealing
	d	Extension
19	What is the primary purpose of saltatory conduction?	
	a	It allows conduction in demyelinated segments
	b	It increases the speed of conduction
	c	It increases conductive coordination
	d	It allows continuous point-to-point depolarization along the nerve
20	Which of the following muscle fibres are branched?	
	a	Skeletal muscle
	b	Cardiac muscle
	c	Smooth muscle
	d	Non-striated muscle
21	The production of glucose from amino acids is termed	
	a	Glycolysis
	b	Glycogenolysis
	c	Gluconeogenesis
	d	Glycogenesis
22	Which of the following proteins in blood is essential for clotting?	
	a	Albumin
	b	Globulin
	c	Fibronectin
	d	Fibrinogen
23	What is vital capacity (VC) of the lungs?	
	a	VC is the maximum volume of air that can be inspired
	b	VC is the maximum volume of air that can be expired after a maximum inspiration
	c	VC is the maximum volume of air retained after a maximum inspiration
	d	VC is the maximum volume of air expired after a tidal inspiration
24	Which of the following blood channels have the smallest luminal size?	
	a	Arteries
	b	Veins
	c	Capillaries
	d	Sinuses

25	What are protooncogenes?
	a Protooncogenes are introduced by viruses into the human genome
	b Protooncogenes are protective genes with anti-cancerous effects in the human genome
	c Protooncogenes are oncogenic genes in non-human species including protozoa
	d Protooncogenes are genes in normal human cells which can undergo oncogenic transformation
26	Which among the following chemicals mediates allergic skin reactions?
	a Glycine
	b Arginine
	c Histamine
	d Dopamine
27	What is the pacemaker of the heart?
	a Sino-atrial node
	b Atrio-ventricular node
	c Purkinje fibres
	d Bundle of His
28	Which of the following brain structures has the greatest role in coordination and balance?
	a Basal ganglia
	b Cerebellum
	c Thalamus
	d Midbrain
29	The functions of viscera are mediated by the
	a Somatic nervous system
	b Automatic nervous system
	c Afferent nervous system
	d Autonomic nervous system
30	Which organism is statins derived from?
	a Bacteria
	b Virus
	c Fungi
	d Bacteriophage
31	Receptor sites for neurotransmitters are found on the _____ of receiving neurons.
	a synaptic vesicles
	b dendrites
	c Node of Ranvier
	d Nucleus
32	The key language centers in the brain in right handed individuals are usually located in the _____.
	a Frontal lobe
	b Limbic system
	c Left hemisphere
	d Right hemisphere
33	Which of the following are characteristics of action potentials?
	a all-or-none response
	b triggered any time a neuron is stimulated
	c Always reversible
	d None of the above

34	The small fluid-filled gap between neurons, across which neurotransmitters travel, is called the
	a Axon terminal
	b Synapse
	c Interneuron
	d Node of Ranvier
35	Motor neurons are generally known as
	a Afferent neurons
	b Glial cells
	c Reflex Arcs
	d Efferent neurons
36	What is damage to the hippocampus likely to affect?
	a Vision
	b Memory
	c Hearing
	d Balance
37	Alzheimer's disease leads to which of the following syndromes
	a General paresis of insane
	b Dementia
	c Myelopathy
	d Functional psychosis
38	ACTH is released by:
	a Adrenal cortex
	b Adrenal medulla
	c Anterior pituitary gland
	d Hypothalamus
39	Choose the neuron with correct location
	a Unipolar neuron- lower motor neuron
	b Multipolar neuron- first order neuron of optic nerve
	c Bipolar neuron- second order neuron of general sensory pathway
	d Multipolar neuron- integrative neuron of general sensory pathway
40	Which part of the brain acts as a relay for sensory information (touch, pain)
	a Hypothalamus
	b Reticular formation
	c Cerebellum
	d Thalamus
41	Which of the following cranial nerves serves taste sensation
	a 1 st
	b 12 th
	c 10 th
	d 7 th
42	Impulses for body balance is transmitted by _____
	a Olfactory nerve
	b Vestibulocochlear nerve
	c Hypoglossal nerve
	d Trigeminal nerve

43	Damage to which lobe after head trauma often leads to dramatic change in behavior and personality
	a Cerebellum
	b Frontal lobe
	c Parietal lobe
	d Occipital lobe
44	Which term is used to describe a process of propagation of action potential
	a Saltatory conduction
	b Anterograde axoplasmic transport
	c Neurogenesis
	d Dendritic pruning
45	Which area is situated in the precentral gyrus
	a Sensory area
	b Olfactory area
	c Motor area
	d Visual area
46	_____ is a condition which results from inflammation of myelin sheath of neurons
	a Stroke
	b Dementia
	c Multiple sclerosis
	d Cerebral palsy
47	_____ is a condition which is commonly due to infection of the brain
	a Meningoencephalitis
	b Ischemic stroke
	c Concussion
	d Arsenic poisoning
48	The amplitude of brain electrical signals recorded on EEG is in
	a Microvolts
	b Megavolts
	c Volts
	d Minivolts
49	Which of the following primarily causes immune-deficiency
	a Alzheimer's disease
	b Gastritis
	c HIV
	d Tuberculosis
50	_____ is used to refer to the process of comparison of measurement values delivered by a device under test with that of a standard device used to measure a biological signal
	a Filter
	b Analogue to digital conversion
	c Amplification
	d Calibration
51	A particle is moved in a semi-circular path of radius R. Then
	a its average velocity is zero
	b its average acceleration is zero
	c its magnitude of displacement is 2R
	d its average velocity and average speed are equal

52	The density of kerosene is 800 kg/m^3 . Its relative density is	
	a	1.6
	b	3.2
	c	1
	d	0.8
53	Among the following photosensitive substances, the one which emits electrons when it is illuminated by visible light is	
	a	Platinum
	b	Zinc
	c	Sodium
	d	Cadmium
54	A comet orbits around Sun in an elliptical orbit. Which of the following quantities remains constant during the course of its motion?	
	a	Linear velocity
	b	Angular velocity
	c	Angular momentum
	d	Kinetic energy
55	Pressure of ideal and real gases at 0 K are	
	a	>0 and 0
	b	<0 and 0
	c	0 and 0
	d	>0 and <0
56	Protein is a polymer made of	
	a	Carbohydrates
	b	amino acids
	c	nucleic acids
	d	carboxylic acids
57	A freely suspended magnet aligns in which direction?	
	a	South-west
	b	East-west
	c	North-south
	d	North-west
58	The SI unit of magnetic flux is	
	a	Dyne
	b	Tesla
	c	Weber
	d	Ohm
59	Balmer series lies in which spectrum?	
	a	Ultraviolet
	b	Visible
	c	Infrared
	d	Partially Visible
60	Ethers may be used as solvents because they react only with which of the following reactants?	
	a	Oxidizing agent
	b	Acids
	c	Bases
	d	Reducing agents

61	Drugs that prevent an enzyme's binding site from a substrate are known as	
	a	messengers
	b	inhibitors
	c	receptors
	d	None of these
62	Python identifiers are case sensitive.	
	a	True
	b	False
	c	Depends on Program
	d	Depends on the computer system
63	The different names given to different parts of a program is known as	
	a	Identifiers
	b	Literals
	c	Keywords
	d	Operators
64	Which of the following are symbols used for computation or logical comparison in a program?	
	a	Identifiers
	b	Literals
	c	Keywords
	d	Operators
65	Which of the following can be Software?	
	a	Routers
	b	Firewalls
	c	Gateway
	d	Modems
66	Name the protocol that is used to receive emails	
	a	POP
	b	VOIP
	c	DHCP
	d	FTP
67	Which one of the following is the most common internet protocol?	
	a	HTML
	b	NetBEUI
	c	TCP/IP
	d	IPX/SPX
68	The term HTTP stands for?	
	a	Hyper terminal tracing program
	b	Hypertext tracing protocol
	c	Hypertext transfer protocol
	d	Hypertext transfer program
69	Which of the following is the fastest media of data transfer?	
	a	Co-axial Cable
	b	Untwisted Wire
	c	Telephone Lines
	d	Fiber Optic
70	Gauss law is valid for	
	a	any closed surface
	b	only regular closed surface
	c	any open surface
	d	None of the above

71	A capacitor consists of.....	
	a	two insulators separated by a conductor
	b	two conductors separated by an insulator
	c	two insulators only
	d	two conductors only
72	Which of the following is blocked by a capacitor?	
	a	A.C.
	b	D.C
	c	Both A.C. and D.C.
	d	Neither A.C. nor D. C
73	In a parallel plate capacitor, the capacity increases if	
	a	area of the plate is decreased.
	b	distance between the plates increases.
	c	area of the plate is increased.
	d	dielectric constantly decreases.
74	The resistance of the wire varies inversely as:	
	a	Area of cross section
	b	Resistivity
	c	Length
	d	Temperature
75	Ohms law is valid when the temperature of conductor is:	
	a	very low
	b	very high
	c	varying
	d	constant
76	Siemen is the unit of:	
	a	resistance
	b	conductance
	c	specific conductance
	d	none of these
77	Voltage is a form of:.....	
	a	Kinetic energy
	b	Potential energy
	c	both Potential and Kinetic energy
	d	none of these
78	The resistance of a human body is about:	
	a	12 Ω
	b	120 Ω
	c	12 k Ω
	d	120 M Ω
79	Henry is the S.I. unit of	
	a	resistance
	b	capacity
	c	inductance
	d	current
80	A moving conductor coil produces an induced e.m.f. This is in accordance with	
	a	Lenz's law
	b	Faraday's law
	c	Coulomb's law
	d	Ampere's law

81	A dynamo converts
	a mechanical energy into thermal energy
	b electrical energy into thermal energy
	c thermal energy into electrical energy
	d mechanical energy into electrical energy
82	According to classical theory, the path of an electron in Rutherford atom model is
	a spiral
	b circular
	c parabolic
	d straight line
83	Kinetic energy of emitted electrons depends upon
	a frequency
	b intensity
	c nature of atmosphere surrounding the electrons
	d none of these
84	The photoelectric effect can be explained by
	a Corpuscular theory of light
	b Wave nature of light
	c Bohr's theory
	d Quantum theory
85	The process of increasing the strength of a signal using an electronic circuit is called
	a modulation
	b demodulation
	c amplification
	d transmission
86	Modem is a device which performs
	a modulation
	b demodulation
	c rectification
	d modulation and demodulation
87	The sky appears blue because of
	a scattering of light
	b interference of light
	c dispersion of light
	d diffraction of light
88	A.C. power is transmitted from a powerhouse at a high voltage as
	a the rate of transmission is faster at high voltages
	b it is more economical due to less power loss
	c power cannot be transmitted at low voltages
	d a precaution against theft of transmission lines
89	Mole is the SI unit of
	a concentration
	b mass
	c amount of substance
	d Density

90	Which one of the following is non-crystalline or amorphous?	
	a	Diamond
	b	Graphite
	c	Glass
	d	Common Salt
91	Teflon and neoprene are the examples of	
	a	copolymers
	b	monomers
	c	homopolymers
	d	condensation polymers
92	Malachite is an ore of	
	a	iron
	b	copper
	c	zinc
	d	Sliver
93	A wave is said to be polarized if:	
	a	The direction of vibration of the wave is always in the same plane.
	b	The direction of propagation of the wave is always in the same plane.
	c	The amplitude of the wave is always in the same plane.
	d	The energy of the wave is always in the same plane.
94	The Brewster's angle for a given medium is the angle of incidence at which:	
	a	The reflected light is completely polarized.
	b	The refracted light is completely polarized.
	c	The reflected and refracted light are perpendicular to each other.
	d	The reflected and refracted light are parallel to each other.
95	Fiber optics is a technology that uses:	
	a	Light to transmit information over long distances.
	b	Electricity to transmit information over long distances.
	c	Sound to transmit information over long distances.
	d	Microwaves to transmit information over long distances.
96	The dispersion of light is the phenomenon of:	
	a	Different colors of light bending at different angles when they pass through a medium.
	b	The splitting of white light into its component colors.
	c	The bending of light around an obstacle.
	d	The reflection of light off a surface.
97	A lens that converges light rays is called a:	
	a	Concave lens.
	b	Convex lens.
	c	Plano-concave lens.
	d	Plano-convex lens.
98	The focal length of a lens is the distance from the lens to the:	
	a	Principal focus.
	b	Nodal point.
	c	Optical center.
	d	Image.
99	Which of the following is the correct electronic configuration of carbon?	
	a	2, 4
	b	2, 6
	c	1, 6, 1
	d	3, 2, 1

100	Which of the following is the correct formula for the ionic compound formed between sodium and chlorine?	
	a	NaCl
	b	Na ₂ Cl ₂
	c	NaCl ₂
	d	Na(Cl) ₂



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Answer Key

Question No.	Correct answer	Question No.	Correct answer	Question No.	Correct answer
1.	b	38.	c	75.	d
2.	c	39.	d	76.	b
3.	a	40.	d	77.	b
4.	b	41.	d	78.	c
5.	d	42.	b	79.	c
6.	d	43.	b	80.	b
7.	a	44.	a	81.	d
8.	c	45.	c	82.	a
9.	c	46.	c	83.	a
10.	b	47.	a	84.	d
11.	a	48.	a	85.	c
12.	a	49.	c	86.	d
13.	b	50.	d	87.	a
14.	b	51.	c	88.	b
15.	c	52.	d	89.	c
16.	d	53.	c	90.	c
17.	c	54.	c	91.	c
18.	b	55.	c	92.	b
19.	b	56.	b	93.	a
20.	b	57.	c	94.	a
21.	c	58.	c	95.	a
22.	d	59.	b	96.	b
23.	b	60.	b	97.	b
24.	c	61.	b	98.	a
25.	d	62.	a	99.	a
26.	c	63.	a	100.	a
27.	a	64.	d		
28.	b	65.	b		
29.	d	66.	a		
30.	c	67.	c		
31.	b	68.	c		
32.	c	69.	d		
33.	a	70.	a		
34.	b	71.	b		
35.	d	72.	b		
36.	b	73.	c		
37.	b	74.	a		

