

2022-23 (Sem-I)

Paper / Subject Code: 66305 / Human Anatomy & Physiology (R-2019)

Time:3 Hours

Marks:75

Q. 1 Attempt all multiple-choice questions (MCQ)

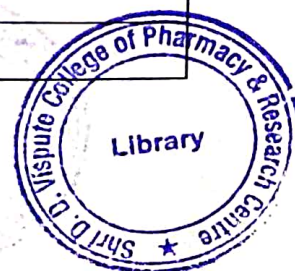
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Sr No	QUESTIONS		OPTIONS
1	..... is the basic, structural and functional unit of the body.	a	Blood
		b	Cell
		c	Tissue
		d	Bone
2	Adipose tissue is the type of.....	a	Epithelial tissue
		b	Connective tissue
		c	Muscular tissue
		d	Nervous tissue
3	The number of bones in the human body of an adult is approximately.....	a	201
		b	128
		c	206
		d	236
4	.....muscles are responsible for voluntary movement of the body	a	Cardiac
		b	Skeletal
		c	Smooth
		d	Epithelial
5	In Osmosis, movement of _____ occurs through the semi-permeable membrane	a	Solvent
		b	Solute
		c	Glucose
		d	A and B

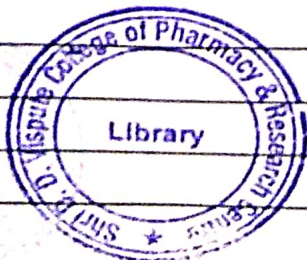
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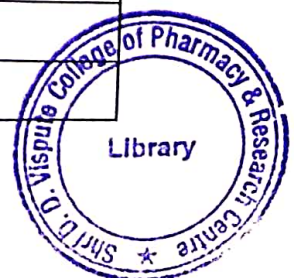
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6	Lymphatic tissue is a specialized form of -----that contains large numbers of lymphocytes.	a	Reticular connective tissue
		b	Loose connective tissue
		c	Dense connective tissue
		d	Areolar connective Tissue
7	.....activity is associated with the parasympathetic system.	a	Digestion
		b	Emergency
		c	Exercise
		d	Sleeping
8	.....is the largest lymph organ.	a	Kidney
		b	Spleen
		c	Small Intestine
		d	Thymus
9	Person with Blood group .....have Red blood cells that do not contain either A or B antigens on their surface	a	A
		b	O
		c	B
		d	AB
10	_____ is known as the "brain of the gut".	a	Somatic Nervous system
		b	Enteric Nervous system
		c	Sympathetic Nervous system
		d	Parasympathetic Nervous system
11	Neurotransmitter released by presynaptic nerve fibre in the sympathetic nervous system is _____.	a	Nor-Adrenaline
		b	Acetyl choline
		c	Epinephrine
		d	GABA



12	A clear fluid composed mainly of water, electrolytes, and some small plasma proteins is called _____	a	Plasma
		b	Serum
		c	Lymph
		d	Interstitial fluid
13	Heme portion of the haemoglobin is synthesized in _____	a	Ribosomes
		b	Mitochondria
		c	Smooth endoplasmic reticulum
		d	Nucleus
14	_____ plexus of enteric nervous system are responsible for increasing tone of gut.	a	Submucosal plexus
		b	Myentric plexus
		c	Cervical plexus
		d	Lumbar plexus
15	Cardiac output is not affected by.....	a	Heart rate
		b	Peripheral resistance
		c	Systolic blood pressure
		d	Venous return
16	The substance most likely to cause a rapid drop in blood pressure is....	a	Histamine
		b	Serotonin
		c	Angiotensin II.
		d	Norepinephrine
17	The human heart is made up of.....	a	Tendon
		b	Muscle
		c	Skin
		d	Bone
18	.....has minimum blood Pressure.	a	Aorta
		b	Arteries
		c	Capillaries
		d	Venules



19	The Peripheral resistance is maximum in....	a	Aorta
		b	Arteriole
		c	Artery
		d	Vein
20	..... is a balancing organ in humans.	a	Eardrum
		b	Vestibular region of ear
		c	Organ of corti in ear
		d	Nose

**Q 2. Attempt ANY TWO of the followings**

- I. a. Discuss in detail composition and functions of blood. **20 M**  
5M
- b. Describe in detail parasympathetic division of ANS with respect to actions on effector organs. **5M**
- II. a. Explain the conduction system of heart. **5M**
- b. Write a note on ECG of normal heart. **5M**
- III. a. Explain the structure of Lymph node **5M**  
b. Give the composition of lymph. Explain the flow of lymph. **5M**

**Q 3. Attempt ANY SEVEN of the followings**

- 35 M**
- I. Explain the Passive transport of substances across the plasma membrane. **5M**
- II. Explain the structure of skeletal muscles. **5M**
- III. Discuss function of lymphatic system. Add a note on anatomy and functions of Thymus. **5M**
- IV. Discuss in detail the life cycle of RBC. **5M**
- V. Write a note on fight or flight response giving examples. **5M**
- VI. Explain Cardiovascular System Schematically (Flow chart). **5M**
- VII. Explain the anatomy of the tongue with its various types of papillae **5M**
- VIII. Classify joints. Add a note on synovial joint. **5M**
- XI. Describe the phases of Cardiac Cycle. **5M**



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20M

Sr No	Questions		Options
1	The only movable bone of the skull is .....	a	Maxilla
		b	Mandible
		c	Temporal bone
		d	Frontal bone
2	Plasma membrane is made up of.....	a	A protein, a lipid and a cellulose layer
		b	A protein layer between two lipid layers
		c	A lipid layer between two protein layers
		d	Bimolecular lipid layer surrounded by protein layers
3	In the electrocardiogram, the-----	a	T wave is due to repolarization of the ventricles
		b	RT interval is related to ventricular action potential duration
		c	R-R interval normally varies during the respiratory cycle
		d	All of the above



4	For Cardiac output identify the false statement	a	Is normally expressed as the output of one ventricle in litres/minute
		b	May not increase when heart rate rises
		c	Usually rises when a person lies down
		d	Does not increase in exercise following denervation of the heart
5	Nervous tissue is not found in.....	a	brain
		b	tendons
		c	nerves
		d	spinal cord
6	The study of joints is known as .....	a	Archaeology
		b	Arthrology
		c	Osteology
		d	Anthropology
7	_____ is called the "Graveyard" of RBC.	a	Thymus
		b	Spleen
		c	Kidney

		d	Stomach
8	Arterioles.....	a	Have a smaller wall:lumen ratio than have arteries
		b	Play a major role in regulating arterial blood pressure
		c	Have a larger total cross-sectional area than do the capillaries
		d	A and C
9	Involuntary oscillatory eye movements (nystagmus).....	a	Do not occur in healthy people
		b	May result from cochlear disease
		c	Occur in cerebellar disease
		d	Both A and B
10	The Purkinje tissue cells in the heart (identify the false statement).....	a	Conduct impulses faster than some neurones
		b	Are larger than ventricular myocardial cells
		c	Lead to contraction of the base before the apex of the heart
		d	Are responsible for the short duration of the QRS complex
11	In long-sightedness (hypermetropia).....	a	Objects at infinity cannot be focused sharply on the retina



		b	Objects at the usual near-point are focused behind the retina
		c	Ciliary muscle contracts more strongly to bring objects in mid-visual range into clear focus
		d	Both B and C
12	In the brachial artery.....	a	Pulse waves travel at the same velocity as blood
		b	Pulse pressure falls with decreasing elasticity of the wall
		c	Pressure rises markedly when the artery is occluded distally
		d	Pressure falls when the arm is raised above head level
13	Person with Blood group have Red blood cells that do not contain either A or B antigens on their surface.	a	O
		b	A
		c	AB
		d	A
14	Thymosin from epithelial cells is secreted by _____	a	Spleen
		b	Thymus
		c	Lymph node
		d	Lumph

15	_____ is the primary function of platelets.	a	Helps in transport of gases
		b	Protects body from infection
		c	Prevent and stop bleeding
		d	Acts as a covering
16	Sympathetic effect on pupil is _____	a	Dilation
		b	Constriction
		c	No change
		d	Pupil turns upward
17	_____ is the longest bone in the body.	a	Humerus
		b	Tibia
		c	Fibula
		d	Femur
18	Preganglionic fiber neurotransmitter in sympathetic division is _____	a	Adrenaline
		b	GABA
		c	Acetylcholine
		d	Noradrenaline



19	Tibia is a bone found in the	a	Skull
		b	Leg
		c	Face
		d	Arm
20	The study of the nervous system and its disorder is called	a	Urology
		b	Herpetology
		c	Hematology
		d	Neurology

**Q 2.A. Attempt ANY TWO of the followings (2×10=20M)**

- i. Explain the Structure of Cardiac Muscle, and the Cardiac Conduction System
- ii. Explain the anatomy of the eye. Add a note on the visual projection pathway.
- iii. Classify peripheral nervous system. Write a detailed note on the Parasympathetic nervous system.

**Q 2.B. Attempt ANY SEVEN of the followings (7×5=35M)**

- i. Define Tissue. Classify & Explain Location, Structure & Function of Epithelial Tissue
- ii. Define cardiac output. Describe the factors affecting stroke volume.
- iii. Classify bones. Explain structure of the long bone.
- iv. Discuss the anatomy and physiology of spleen.
- v. Give functional classification of Joints. Explain the structure of Synovial Joint.
- vi. Describe the properties and types of Sensory Receptors.
- vii. Explain the regulation of Heart Rate. Describe autonomic and chemical regulation of heart rate.
- viii. Compare and contrast autonomic nervous system and somatic nervous system.
- ix. Define Blood. Give composition of blood with the help of schematic representation.  
Give functions of blood.