SNS COLLEGE OF PHARMACY AND HEALTH SCIENCES

UNIT 2

COURSE NAME: HUMAN ANATOMY AND PHYSIOLOGY-I

TOPIC: DIVISIONS OF SKELETAL SYSTEM

Sl. No.	Question Type	Question	Bloom's Taxonomy Level	Mapping (Exams/Syllabus)
1	10-Mark	Analyze the divisions of the skeletal system and evaluate the functional significance of the axial versus appendicular skeleton in maintaining posture and locomotion. Create a labeled diagram illustrating key bones in each division.	Analyzing / Evaluating / Creating	TNMGRMU Unit II divisions; GPAT skeletal overview
2	10-Mark	Apply the sliding filament theory to explain the physiology of skeletal muscle contraction. Evaluate the roles of calcium ions and ATP in the process, and create a step-by-step schematic diagram of the cross-bridge cycle.	Applying / Evaluating / Creating	PCI muscle physiology; RRB contraction; GPAT/NIPER mechanism
3	10-Mark	Differentiate between the structural and functional classifications of joints. Analyze the synovial joint's components and evaluate their contribution to movements like flexion and rotation, with a created diagram of a knee joint.	Analyzing / Evaluating / Creating	TNMGRMU joints; NIPER joint types; GPAT classification

4	10-Mark	Describe the organization of skeletal muscle from myofibril to sarcomere level. Apply this knowledge to evaluate how disruptions in sarcomere structure lead to muscle disorders, and create a labeled ultrastructural diagram.	Applying / Evaluating / Creating	GPAT muscle organization; RRB skeletal muscle; TNMGRMU Unit II
5	10-Mark	Evaluate the salient features and functions of the vertebral column bones. Analyze its curvatures' role in shock absorption and spinal cord protection, including a created diagram of regional vertebrae.	Analyzing / Evaluating / Creating	PCI axial skeleton; TNMGRMU features; RRB vertebral functions
6	10-Mark	Compare the types of bones (long, short, flat, irregular, sesamoid) based on structure and location. Apply examples from the appendicular skeleton to evaluate their adaptive functions, with a comparative table and diagram.	Analyzing / Applying / Creating	NIPER bone types; GPAT structure; PCI types
7	10-Mark	Explain synaptic transmission at the neuromuscular junction. Evaluate the impact of neurotransmitter imbalances on muscle function, and create a diagram showing acetylcholine release and receptor binding.	Evaluating / Creating	TNMGRMU neuromuscular junction; RRB synapse; GPAT transmission
8	10-Mark	Analyze the bones of the pectoral girdle and upper limb, evaluating their articulations for shoulder mobility. Apply this	Analyzing / Evaluating / Applying	PCI appendicular; GPAT limb anatomy; NIPER girdle

		to discuss injury-prone areas, with a labeled sketch.		
9	10-Mark	Evaluate the process of bone remodeling involving osteoblasts and osteoclasts. Analyze its regulation by hormones like parathyroid hormone, and create a flowchart diagram of the cycle.	Evaluating / Analyzing / Creating	NIPER bone functions; TNMGRMU histology; GPAT remodeling
10	10-Mark	Design a comprehensive explanation of skeletal muscle energy sources during contraction (ATP, creatine phosphate, glycolysis). Evaluate their efficiency in aerobic vs. anaerobic conditions, with a created energy pathway diagram.	Creating / Evaluating	GPAT muscle physiology; RRB contraction; PCI energy sources
1	5-Mark	Describe the functions of the skeletal system and apply them to explain calcium homeostasis.	Understanding / Applying	TNMGRMU functions; GPAT basics; PCI homeostasis
2	5-Mark	Explain the structure of compact and spongy bone, applying the Haversian system concept.	Understanding / Applying	PCI bone structure; NIPER types; GPAT histology
3	5-Mark	Classify joints structurally with examples, applying to common movements.	Understanding / Applying	TNMGRMU classification; RRB joints; NIPER examples
4	5-Mark	Describe the neuromuscular junction components and apply to synaptic transmission basics.	Understanding / Applying	GPAT synapse; TNMGRMU Unit II; RRB transmission

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5	5-Mark	Explain the role of tropomyosin and troponin in muscle contraction regulation.	Understanding / Applying	RRB physiology; PCI muscle; GPAT regulation
6	5-Mark	Describe the features of the pelvic girdle bones and their load-bearing function.	Understanding / Applying	NIPER appendicular; GPAT girdle; PCI features
7	5-Mark	Explain the A-band and I-band changes during muscle contraction.	Understanding / Applying	TNMGRMU sarcomere; GPAT sliding theory
8	5-Mark	Describe the true, false, and floating ribs, applying to thoracic protection.	Understanding / Applying	PCI axial; RRB thoracic; TNMGRMU ribs
9	5-Mark	Explain the types of synovial joints with one example each.	Understanding / Applying	TNMGRMU types; NIPER movements; GPAT synovial
10	5-Mark	Describe bone marrow types and apply their roles in hematopoiesis.	Understanding / Applying	GPAT functions; TNMGRMU features; PCI marrow
1	2-Mark	Recall the two main divisions of the skeletal system.	Remembering	TNMGRMU divisions; PCI overview
2	2-Mark	Define osteocyte and its function.	Remembering	PCI histology; GPAT cells
3	2-Mark	Name the five types of bones.	Remembering	GPAT types; NIPER classification
4	2-Mark	What is the Z-disc in a sarcomere?	Understanding	RRB muscle structure; TNMGRMU sarcomere
5	2-Mark	Recall the number of bones in the adult human skeleton.	Remembering	NIPER overview; PCI facts

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6	2-Mark	Define the neuromuscular junction.	Remembering	TNMGRMU Unit II; GPAT synapse
7	2-Mark	Name the hormone regulating bone resorption.	Remembering	GPAT physiology; NIPER hormones
8	2-Mark	Recall the four main functions of bones.	Remembering	PCI functions; TNMGRMU basics
9	2-Mark	What is the M-line in skeletal muscle?	Understanding	RRB sarcomere; GPAT structure
10	2-Mark	Name the bones forming the cranium.	Remembering	TNMGRMU axial; PCI skull
11	2-Mark	Define hinge joint with an example.	Understanding	NIPER joints; GPAT types
12	2-Mark	Recall the components of a synovial joint capsule.	Remembering	GPAT classification; TNMGRMU synovial
13	2-Mark	What is the role of acetylcholinesterase at the neuromuscular junction?	Understanding	PCI transmission; RRB enzyme
14	2-Mark	Name the longest bone in the body.	Remembering	RRB facts; GPAT trivia
15	2-Mark	Define red bone marrow's primary function.	Remembering	TNMGRMU features; GPAT marrow
16	2-Mark	Recall the regions of the vertebral column.	Remembering	NIPER axial; PCI regions
17	2-Mark	What is rigor mortis in muscle physiology?	Understanding	GPAT contraction; RRB phenomena
18	2-Mark	Name the sesamoid bone in the knee.	Remembering	PCI types; NIPER examples

19	2-Mark	Define abduction as a joint movement.	Understanding	TNMGRMU movements; GPAT terms
20	2-Mark	Recall the total number of pairs of ribs.	Remembering	RRB thoracic; PCI axial