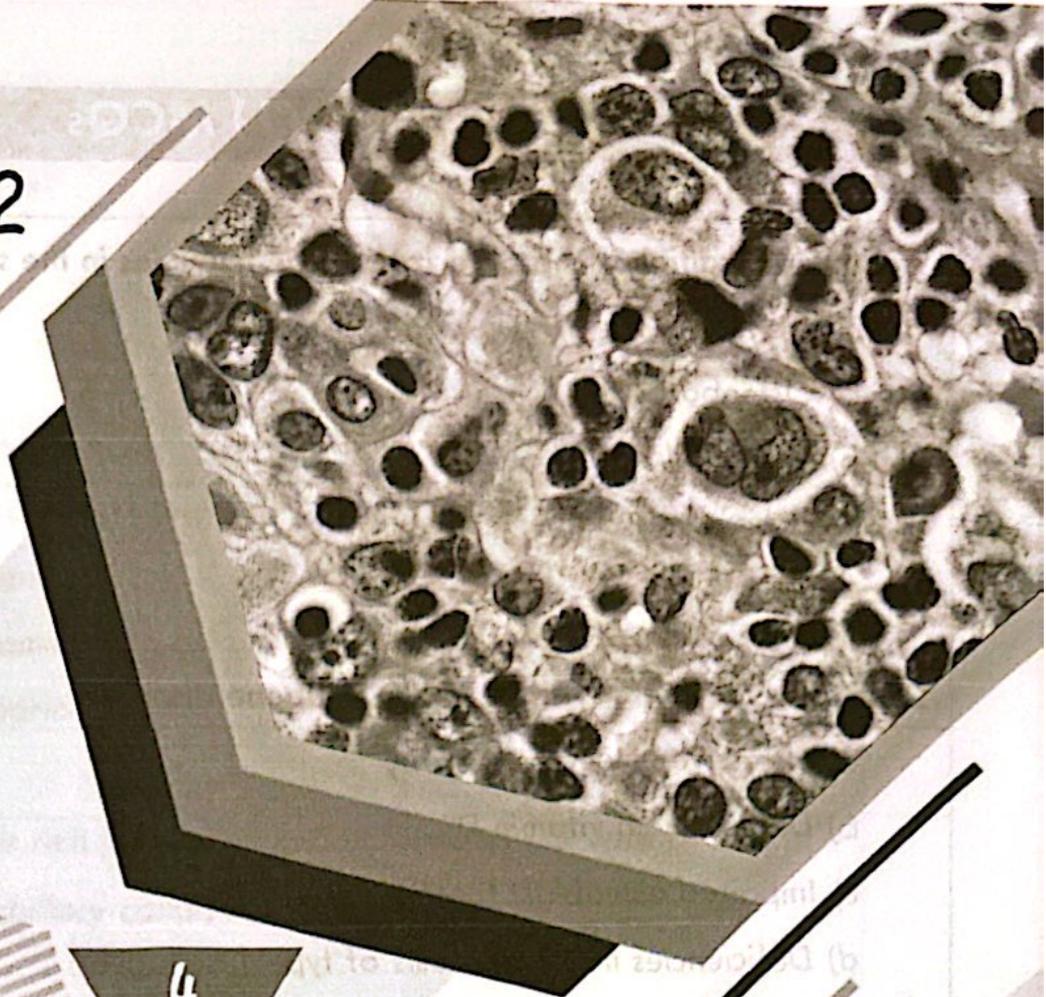


Level 1  
Semester 2  
**MSK**



**L1**

4  
L.E

**MCQ**  
**Pathology**  
**Dr. Ahmed Hhassan**

## Lecture (1) MCQs

<p><b>1. Which condition is characterized by deficiencies in the synthesis of type I collagen?</b></p> <ul style="list-style-type: none"><li>a) Osteoporosis</li><li>b) Osteomalacia</li><li>c) Osteogenesis imperfecta</li><li>d) Paget's disease</li></ul>	<b>C</b>
<p><b>2. What is the primary cause of brittle bone disease?</b></p> <ul style="list-style-type: none"><li>a) Excessive osteoclast activity</li><li>b) Deficiency in vitamin D</li><li>c) Impaired osteoblast function</li><li>d) Deficiencies in the synthesis of type I collagen</li></ul>	<b>D</b>
<p><b>3. Which disorder is characterized by a quantitative reduction in bone tissue mass without an underlying disease or medication?</b></p> <ul style="list-style-type: none"><li>a) Osteoporosis</li><li>b) Osteomalacia</li><li>c) Osteopetrosis</li><li>d) Osteitis fibrosa cystica</li></ul>	<b>A</b>
<p><b>4. Which diagnostic method is used to measure bone density?</b></p> <ul style="list-style-type: none"><li>a) X-ray</li><li>b) Magnetic resonance imaging (MRI)</li><li>c) Dual-energy x-ray absorptiometry (DEXA)</li><li>d) Computed tomography (CT) scan</li></ul>	<b>C</b>



<p><b>5. Osteogenesis imperfecta is caused by deficiencies in the synthesis of which type of collagen?</b></p> <p>a) Type I collagen  b) Type II collagen  c) Type III collagen  d) Type IV collagen</p>	<p><b>A</b></p>
<p><b>6. What is the 1ry cause of osteomalacia in adults and rickets in children?</b></p> <p>a) Deficiency of vitamin D  b) Deficiency of vitamin C  c) Excess sodium fluoride content  d) Hyperthyroidism</p>	<p><b>A</b></p>
<p><b>7. Which type of bone is rich in marrow and is found at the ends of long bones within the medullary canal?</b></p> <p>a) Cortical bone  b) Cancellous bone  c) Lamellar bone  d) Osteoid bone</p>	<p><b>B</b></p>
<p><b>8. Which type of bone is characterized by an irregular arrangement of collagen fibers and signifies a pathologic condition in adults?</b></p> <p>a) woven bone  b) Cancellous bone  c) Lamellar bone  d) Osteoid bone</p>	<p><b>A</b></p>
<p><b>9. Which cells within the bone produce osteoid, the bone protein?</b></p> <p>a) Osteoblasts  b) Osteocytes  c) Osteoclasts  d) Chondrocytes</p>	<p><b>A</b></p>



<p><b>10. Which type of osteoporosis occurs in postmenopausal women and is characterized by a quantitative reduction in bone tissue mass without an underlying disease or medication?</b></p> <p>a) Idiopathic osteoporosis b) Involutional osteoporosis c) Secondary osteoporosis d) Metabolic osteoporosis</p>	<b>B</b>
<p><b>11. Which genetic disorder is characterized by a brittle bone disease and is caused by deficiencies in the synthesis of type I collagen?</b></p> <p>a) Osteogenesis imperfecta b) Achondroplasia c) Osteopetrosis d) Paget's disease</p>	<b>A</b>
<p><b>12. What is the primary risk factor for developing osteoporosis in postmenopausal women?</b></p> <p>a) Genetic factors b) Reduced physical activity c) Estrogen deficiency d) Vitamin D deficiency</p>	<b>C</b>
<p><b>13. Which type of bone is responsible for forming the adult skeleton?</b></p> <p>a) Cortical bone b) Cancellous bone c) Lamellar bone d) Osteoid bone</p>	<b>C</b>



<p><b>14. Which condition is characterized by the formation of dense, stone-like bone that occupies most of the available marrow space but provides poor structural support?</b></p> <p>a) Osteogenesis imperfecta b) Osteopetrosis c) Osteoporosis d) Osteomalacia</p>	<p><b>B</b></p>
<p><b>15. Which vitamin deficiency is associated with subperiosteal hemorrhages?</b></p> <p>a) Vitamin A deficiency b) Vitamin C deficiency c) Vitamin D deficiency d) Vitamin K deficiency</p>	<p><b>B</b></p>
<p><b>16. Gigantism and acromegaly are caused by hypersecretion of hormones from which gland?</b></p> <p>a) Pituitary gland b) Thyroid gland c) Adrenal gland d) Parathyroid gland</p>	<p><b>A</b></p>
<p><b>17. Which condition is characterized by impaired osteoclast function or formation, leading to decreased bone resorption and an excess of bone formation?</b></p> <p>a) Osteoporosis b) Osteomalacia c) Osteopetrosis d) Osteogenesis imperfecta</p>	<p><b>C</b></p>



<p><b>18. Which condition is characterized by abnormal bone remodeling, resulting in enlarged and deformed bones?</b></p> <p>a) Osteogenesis imperfecta  b) Achondroplasia  c) Osteopetrosis  d) Paget's disease</p>	<b>D</b>
<p><b>19. What is the primary cause of rickets in children?</b></p> <p>a) Vitamin D deficiency  b) Vitamin C deficiency  c) Excess sodium fluoride content  d) Hyperparathyroidism</p>	<b>A</b>
<p><b>20. What is the cause of rickets in children?</b></p> <p>a) Insufficient exposure to sunlight  b) Decreased intake or absorption of vitamin D  c) Prematurity  d) Increased demands for calcium  e) all of the above</p>	<b>E</b>
<p><b>21. In rickets, what happens to the cartilage cells at the epiphyseal line?</b></p> <p>a) They calcify and degenerate  b) They continue to proliferate and lay down chondroid matrix  c) They transform into osteoblasts  d) They are replaced by capillary loops</p>	<b>B</b>
<p><b>22. Which skeletal deformity is commonly seen in rickets?</b></p> <p>a) Bow legs  b) Kyphosis  c) Pigeon chest  d) Lordosis</p>	<b>A</b>



<p><b>23. Which hormone plays a central role in Ca homeostasis and ↑ bone resorption?</b></p> <p>a) Parathyroid hormone (PTH)  b) Calcitonin  c) Thyroid-stimulating hormone (TSH)  d) Growth hormone (GH)</p>	<p><b>A</b></p>
<p><b>24. Which condition is characterized by increased osteoclast activity, bone resorption, and osteopenia due to excess production and activity of PTH?</b></p> <p>a) Osteoporosis  b) Osteopetrosis  c) Osteitis fibrosa cystica  d) Paget's disease</p>	<p><b>C</b></p>
<p><b>25. What is the hallmark feature of Paget's disease of bone in the sclerotic phase?</b></p> <p>a) Mosaic pattern of lamellar bone  b) Numerous large osteoclasts and resorption pits  c) Prominent osteoblasts lining bone surfaces  d) Enlargement of the craniofacial skeleton</p>	<p><b>A</b></p>
<p><b>26. Vitamin D deficiency leading to impaired mineralization and accumulation of unmineralized matrix primarily affects:</b></p> <p>a) Cartilage cells  b) Osteoblasts  c) Osteoclasts  d) Capillary loops</p>	<p><b>A</b></p>

<p><b>27. Which of the following is a characteristic feature of rickets in children?</b></p> <p>a) Delayed closure of sutures and fontanel  b) barrel chest  c) Kyphosis, lordosis, or scoliosis  d) Enlargement of the craniofacial skeleton</p>	<b>A</b>
<p><b>28. Which hormone is responsible for increased osteoclast activity, bone resorption, and osteopenia in hyperparathyroidism?</b></p> <p>a) Parathyroid hormone (PTH)  b) Thyroid-stimulating hormone (TSH)  c) Growth hormone (GH)  d) Insulin-like growth factor (IGF)</p>	<b>A</b>
<p><b>29. Which condition is characterized by the replacement of bone and bone marrow by fibrosis, bizarre osteoclasts, and the development of cysts?</b></p> <p>a) Osteoporosis  b) Osteitis fibrosa cystica  c) Paget's disease  d) Osteosarcoma</p>	<b>B</b>
<p><b>30. Which phase of Paget's disease of bone is characterized by a predominant osteoblastic activity?</b></p> <p>a) Osteolytic stage  b) Mixed osteoclastic-osteoblastic stage  c) Osteosclerotic stage  d) Quiescent stage</p>	<b>B</b>
<p><b>31. What is the major cause of vitamin D deficiency in adults?</b></p> <p>a) Defective intake or exposure to sunlight  b) Increased demands for calcium  c) Prematurity  d) Decreased absorption of vitamin D</p>	<b>A</b>



<p><b>32. Which condition is associated with an incidental radiographic finding, axial skeleton or proximal femur involvement, and the potential development of leontiasis ossea?</b></p> <p>a) Osteoporosis  b) Rickets  c) Paget's disease  d) Osteosarcoma</p>	<p><b>C</b></p>
<p><b>33. In rickets, what happens to the ends of long bones?</b></p> <p>a) They become calcified  b) They thicken due to the deposition of unmineralized matrix  c) They degenerate and are replaced by capillary loops  d) They develop green stick fractures</p>	<p><b>B</b></p>
<p><b>34. Which feature is characteristic of osteomalacia in the skull?</b></p> <p>a) Delayed dentition  b) Rosary chest  c) Kyphosis  d) Craniotabes (flat occipital bones)</p>	<p><b>D</b></p>
<p><b>35. In rickets, what happens to the cartilage cells at the epiphyseal line?</b></p> <p>a) They calcify and degenerate  b) They continue to proliferate and lay down chondroid matrix  c) They transform into osteoblasts  d) They are replaced by capillary loops</p>	<p><b>B</b></p>
<p><b>36. What is the characteristic skeletal deformity seen in rickets?</b></p> <p>a) Bow legs (genu varum)  b) Knock knees (genu valgum)  c) Scoliosis  d) Clubfoot (talipes equinovarus)</p>	<p><b>A</b></p>



<p><b>37. What is the radiographic finding associated with Paget's disease characterized by areas of increased bone density with a mosaic pattern?</b></p> <p>a) Osteolytic lesions b) Osteosclerotic lesions c) Fracture lines d) Osteochondromas</p>	<p><b>B</b></p>
<p><b>38. Osteomalacia is a metabolic disorder characterized by:</b></p> <p>a) Increased bone resorption b) Excess deposition of calcium in bone c) Impaired mineralization of bone matrix d) Deficiency of osteoclasts</p>	<p><b>C</b></p>
<p><b>39. Osteitis fibrosa cystica is a complication of:</b></p> <p>a) Osteoporosis b) Rickets c) Osteomalacia d) Paget's disease</p>	<p><b>D</b></p>
<p><b>40. Which stage of Paget's disease is characterized by a mixture of increased osteoclastic and osteoblastic activity?</b></p> <p>a) Osteolytic stage b) Osteosclerotic stage c) Quiescent stage d) Mixed osteoclastic-osteoblastic stage</p>	<p><b>D</b></p>
<p><b>41. Patient with Paget's disease of bone, is vulnerable to development of:</b></p> <p>A. Osteomyelitis B. Osteoblastoma C. Fibrous dysplasia D. Osteosarcoma</p>	<p><b>D</b></p>

