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Companion for 2nd MBBS



17th Edition

Singi Yatiraj

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1 PATHOLOGY

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For CBME Curriculum of 2nd MBBS
SCAN THE QR CODE

	HRMN	RBNS	
Section 1: General Pathology and Basic Techniques			
CHAPTER 1			
HISTORY AND EVOLUTION OF MODERN PATHOLOGY			
None			
CHAPTER 2			
MOLECULAR CELL BIOLOGY IN HEALTH AND IN AGEING			
Long Essay			
1. Describe the role of cyclins and RB in the cell cycle.	25	25, 293	D12
Short Answer			
1. List three cell cycle regulators.	25	285	F22(RS3)
Multiple Choice Questions			
1. Basement membrane consists of: a. Type I collagen b. Type II collagen c. Type III collagen **d. Type IV collagen**	—	23	F22(RS4)
2. Correct sequence of cell cycle is: a. G_0-M-G_2-S-G_1 b. G_0-G_1-G_2-S-M **c. G_0-G_1-S-G_2-M** d. G_0-G_1-S-M-G_2	24	25	F23(RS4)
CHAPTER 3			
CELLULAR ADAPTATIONS AND CELL INJURY			
Long Essays			
1. Describe biochemical and molecular mechanisms of cell injury. Discuss morphological features of necrosis.	38, 43, 46	49, 39	J11
2. Compare and contrast the biochemical and structural changes in reversible and irreversible cell injury caused by hypoxia.	40	55	J14

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	HRMN	RBNS	
3. Define necrosis. Enlist the differences between necrosis and apoptosis. Mention the types, explain the causes and pathology of each type of necrosis. Add a note on gangrene.	46, 55, 49	39, 37, 41	D14(RS3), J19(RS3), D02, D07, D11, J15, D15
4. Define apoptosis. Mention the causes. Describe morphological features and mechanism of apoptosis.	53	42	S21(RS3), J16
Short Essays			
1. Heart in fatty change.	—	—	D06
2. Describe different types of cellular adaptations to stress with examples.	32	57	F23(RS4), J15
3. Atrophy.	33	59	J05, J07
4. Hypertrophy—definition, types and mechanism.	34	57	F24(RS4), D08(RS2)
5. Hyperplasia (definition and types).	34	59	J08(RS2)
6. Differences between atrophy/ hypertrophy/hyperplasia.	35	—	J00
7. Hypertrophy and hyperplasia.	34	57, 59	J10
8. Metaplasia—define, pathogenesis, examples.	35	61	J07(RS2), J09(RS2), D19(RS3), N20(RS3), F23(RS3), D10, D14
9. Dysplasia.	36	272	D03, J08, J11
10. Reversible injury.	38	37	J18(RS3)
11. Free radical injury/role of free radicals in cell injury.	41	52	J23(RS3), J00, J03, J07, J08, D13, D15
12. Give three examples for free radicals and antioxidants.	41	52	J17(RS3)
13. Hyaline change (degeneration).	44	64	J16(RS3), J04

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	HRMN	RBNS	
14. Necrosis—definition, morphological features of various types with examples.	46	39	M22(RS4), F24(RS4), J08(RS2), J11(RS2), D11(RS2), J12(RS2), D13(RS3), J17(RS3), D00, D01, J06, D08, J13, D16
15. Coagulative necrosis.	456	40	D09
16. Colliquative necrosis.	46	40	D99
17. Caseous necrosis.	47	41	D06(RS2)
18. Fat necrosis.	47	41	J12(RS2)
19. Gangrene and its types.	49	41	D12(RS3), J13(RS3)
20. Dry gangrene.	49	—	D03
21. Differences between dry and wet gangrenes.	50	—	J14(RS3), J00, D06, J17
22. Pathological calcification.	51	65	F22(RS4), M22(RS4), D06(RS2), D08(RS2), D12(RS3), J14(RS3), D18(RS3), S21(RS3)
23. Dystrophic calcification.	51	65	D07(RS2), J13(RS3), J19(RS3), D99, D01, J05, D08, J12
24. Metastatic calcification.	52	66	D15(RS3), J00, D11
25. Apoptosis (mechanism/ pathogenesis).	53	42	J09(RS2), J15(RS3), J18(RS3), D07, D09, D11

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	HRMN	RBNS	
26. Differences between necrosis and apoptosis.	55	—	M23(RS4)
27. Steatosis (fatty change).	58	62	M21(RS3), J09, J16
28. Fatty liver—etiology, pathogenesis and morphology (gross and microscopy).	58	62	J14(RS3), J18(RS3), F22(RS3), D00, J17
29. Morphological features of fatty change in liver and heart.	59	62	D05
30. Pigments in health and disease.	60	64	F22(RS4)
31. Pigment metabolism.	60	64	D09(RS2)
32. Exogenous and endogenous pigments.	60	64	J11(RS2), D13(RS3), F23(RS3)
33. Hemosiderosis.	62	65	D11(RS2)
34. Brown atrophy of heart.	63	60	J07(RS2)
Short Answers			
1. Atrophy.	33	59	J14, D16
2. Hypertrophy—definition, examples. What is the difference between hypertrophy and hyperplasia?	34	57	D11
3. Hyperplasia (examples).	34	59	D16(RS3), J08
4. Hypertrophy and hyperplasia.	34	57, 59	J07, J16
5. Metaplasia: What is it? What is its significance? Types with three/four examples.	35	61	M23(RS4), J15(RS3), D18(RS3), J19(RS3), D01, J09, D13, J17
6. Dysplasia.	36	272	J13(RS3)
7. Enlist four principles of pathogenesis of cell Injury.	37	49	J17
8. Perfusion injury in ischemia.	41	56	D05
9. Antioxidants.	42	53	J09
10. Hyaline change—define/types with examples.	44	64	J08(RS2), J02, J03, D16

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	HRMN	RBNS	
11. Autolysis.	45	—	J07(RS2)
12. Define and classify necrosis with examples.	45	40	M21(RS3), F23(RS3)
13. Coagulative necrosis.	46	40	D14
14. Coliquative necrosis.	46	40	J11
15. Caseous necrosis.	47	41	D04, J10
16. Fat necrosis.	47	41	J08, J16
17. Gangrene.	49	41	J16
18. Dry gangrene.	49	—	J18(RS3), D10
19. Wet gangrene.	49	41	J12
20. Gas gangrene.	49	380	D19(RS3), J08
21. Dystrophic calcification.	51	65	J15, J16
22. Psammoma bodies.	51	66	F22(RS4), D18(RS3), D11, D12
23. Metastatic calcification (causes).	52	66	J18(RS3), F23(RS3), D04, D07, D16
24. Morphological features of apoptosis (apoptotic cells).	54	43	J01, D04, D05, D10
25. Autophagy with examples.	57	48	M22(RS4), D10
26. Fatty liver—causes/labeled diagram.	58	62	F24(RS4), D03
27. Xanthoma.	59	63	J07(RS2)
28. Exogenous and endogenous pigment.	60	64	J08(RS2), D05, D08
29. Ochronosis.	61	65	D13
30. Lipofuscin pigment.	63	64	D07, D11, J12
31. Brown atrophy of heart.	63	60	D00, D08

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	HRMN	RBNS	
Multiple Choice Questions			
1. Free radicals are all, *except:* a. Superoxide b. Hydrogen peroxide c. Hydroxyl **d. Calcium**	41	52	M22(RS4)
2. Marfans syndrome: **a. Disorders of connective tissue** b. Disorders of thyroid c. Disorders of calcium metabolism d. Vitamin D deficiency	45	148	M23(RS4)
3. A 63-year-old male hypertensive develops paralysis of the right side of the body. Which of the following patterns of tissue injury is likely to be present in the brain after 4–5 days? a. Fat necrosis b. Caseous necrosis c. Coagulated necrosis **d. Liquefactive necrosis**	46	41	F24(RS4)
4. Caspases are involved in: a. Acute inflammation b. Chronic inflammation **c. Apoptosis** d. Regeneration	54	44	M23(RS4)
5. All are pigments stainable by Prussian blue, *except:* a. Hemosiderin b. Haematin c. Ferritin **d. Melanin**	62	—	M22(RS4)
6. Which of the following pigment's presence is a telltale sign of free radical injury? **a. Lipofuscin** b. Melanin c. Bilirubin d. Hematin	63	64	F23(RS4)

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	HRMN	RBNS	
CHAPTER 4			
INFLAMMATION AND HEALING			
Long Essays			
1. Define acute inflammation. Mention the types. Enumerate the features and causes of acute inflammation. Describe vascular and cellular events of acute inflammation.	67, 68, 70	75, 77	D09(RS2), J14(RS3), D17(RS3), J18(RS3), F22(RS3), J01, D04, J08
2. Define inflammation. Enumerate cellular events in inflammation and discuss in detail about phagocytosis.	66, 70	71, 77, 80	J07, J09
3. A 12-year-boy presented with sudden onset of fever and vomiting with abdominal pain. On palpation there is tenderness at McBurney's point. a. What is the probable diagnosis? b. Define inflammation? Enumerate cellular events of inflammation. c. Outcomes of acute inflammation.	66, 70 85	71, 77, 95	F23(RS4)
4. A 10-year-old male presented with pain abdomen, fever and vomiting of one-day duration. On examination, there is tenderness over McBurney's point. Ultrasound examination of the abdomen showed evidence of dilated appendix. a. What type of inflammation is seen in this condition? b. Discuss the cellular events occurring in this condition. c. List the chemical mediators that facilitate the cellular events.	67, 70, 73	75, 77, 85	F24(RS4)
5. Define inflammation. Discuss in detail about chemical mediators of inflammation.	66, 73	71, 85	D08, D10
6. Describe the cardinal signs of acute inflammation. Describe bone healing of fractures in long bones.	68, 112	73, 1184	J05

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	HRMN	RBNS	
7. Define and classify granuloma. Explain the evolution, morphology and fate of tuberculous granuloma.	87, 92	100, 371	D01
8. Define granuloma. List the diseases with granulomatous inflammation. Describe the lesions in primary tuberculosis.	87, 93, 88	100, 371	D08(RS2)
9. Describe the morphologic types of secondary tuberculosis.	94	372	D99
10. A 42-year-old male presented with history of fever, cough and weigh loss since 2 months. X-ray of the chest showed cavitary lesion in right apical lobe. a. What is your diagnosis and why? b. Describe the etiopathogenesis of this disease. c. Describe the gross and microscopic findings in the lung.	93	371	J14(RS3)
11. Describe the pathogenesis, pathology of leprosy. Add a note on laboratory diagnosis.	98	374	N20(RS3)
12. What do you understand by the terms: "Healing", "regeneration" and "repair"? Describe the steps in healing by first intention.	110, 107	103, 108	J00
13. Describe the mode of healing by secondary union. List the factors which influence repair. Tabulate the difference between primary and secondary unions.	111, 109	110, 108	D06(RS2)
14. Compare with the help of suitable diagrams wound healing by primary and secondary intention. Discuss the factors promoting and delaying the process.	110, 109	109, 108	D12(RS3)
15. Discuss the healing of fractured bone and its complications.	112	1184	J10
Short Essays			
1. Granulomatous lymphadenitis.	—	—	D14(RS3)
2. C-reactive protein.	—	496	D14
3. Cardinal signs of inflammation.	68	73	D99

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	HRMN	RBNS	
4. Vascular changes in acute inflammation.	67	75	M23(RS4), D07(RS2), D12(RS3)
5. Mechanism of vascular leakage (increased vascular permeability) in inflammation.	68	76	J09
6. Cellular events in acute inflammation.	70	77	D08(RS2)
7. Leukocyte transmigration.	71	78	D07
8. Chemotaxis.	71	79	D15(RS3), D18(RS3), D19(RS3), N20(RS3), D03, D06, J10, J12
9. Phagocytosis and killing.	71	80	M22(RS4), D06(RS2), J07(RS2), J16(RS3), D16(RS3), J19(RS3), J02, J04, D05, D09, J11, J14
10. Chemical mediators of inflammation.	73	85	M22(RS4), D10(RS2), J11(RS2), D13(RS3), J16(RS3), D18(RS3), D05, D12
11. Role of arachidonic acid metabolites in acute inflammation.	74	86	D06(RS2), D16(RS3), J17
12. Cytokines.	75	88	J07(RS2), D07(RS2), J09(RS2), J16
13. Free radicals and acute inflammation.	77	82	J10
14. Role of complements in inflammation.	78	90	J17(RS3)

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	HRMN	RBNS	
15. Write about the role of macrophages in inflammation.	81	97	J10(RS2)
16. Gaint cells.	81	100	D15
17. Morphological types of acute inflammation with examples.	83	93	D14
18. What is an abscess?	83	94	J14
19. Enlist acute phase reactants.	84	89	J14
20. Mechanism of systemic effects of inflammation.	84	101	D15
21. Outcomes of acute inflammation.	85	101	J06
22. Discuss granulomatous inflammation with examples.	87	101	D17(RS3), J23(RS3), J13, D16
23. Granuloma.	87	100	J09(RS2), D15(RS3)
24. Morphological types of TB lung.	93	369	D16
25. Primary tuberculosis.	93	369	J11(RS2), D13(RS3), J18(RS3), J06
26. Primary complex (Gohn complex).	93	371	D11(RS2), F22(RS3), J00, J02, D04, D10, J11, J15
27. Tuberculoma.	93	371	J12(RS2)
28. Pulmonary tuberculosis.	93	368	J15(RS3)
29. Secondary pulmonary tuberculosis.	94	370	J15
30. Fibrocaseous tuberculosis—lung.	94	372	D05
31. Leprosy.	98	374	D12
32. Classify leprosy. Compare the major types of leprosy (difference between tuberculoid and lepramatous leprosy).	98	374	J08(RS2), D12(RS3), D15(RS3), D06
33. What is the pathology (microscopy) of tuberculoid and lepromatous leprosy?	99	374	F22(RS4), J01

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	HRMN	RBNS	
34. Lepromatous leprosy—morphology.	100	374	D10(RS2), F23(RS3), J04, D05
35. Tuberculoid leprosy—morphology.	100	374	J14(RS3), D04
36. Indeterminate leprosy.	100	—	J16(RS3)
37. Stages of syphilis.	102	376	D11(RS2)
38. Anogenital syphilis.	102	376	J12(RS2)
39. Tertiary syphilis.	103	376	D07
40. Gumma.	103	378	D01
41. Congenital syphilis.	103	376	M21(RS3)
42. Actinomycosis (histopathology).	104	—	J14(RS3), J05, J08, J11
43. Sarcoidosis.	105	696	D13
44. Repair—discuss pathological aspect.	107	103	D14
45. Granulation tissue.	108	105	D04
46. Steps of wound healing.	108	108	J12(RS2)
47. Angiogenesis (neovascularization) in repair.	109	106	D16(RS3), J07
48. Factors influencing and complications of wound healing/ process of repair and regeneration.	109	108, 110	M22(RS4), J08(RS2), D10(RS2), J13(RS3), J15(RS3), M21(RS3), F23(RS3), D01, J03, D10, J12, D13, D16
49. Mechanism of wound healing by first intention (primary union).	110	108	F22(RS4), J18(RS3), D02, D08, J11, J13
50. Wound healing by secondary intention. Mention the factors influencing wound healing.	111	110	S21(RS3), D99, J06
51. Complications of healing in skin wounds.	111	110	J14(RS3), D03
52. Healing in specialized tissues.	112	—	D10
53. Fracture healing.	112	1184	D09(RS2), J16

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	HRMN	RBNS	
Short Answers			
1. Enlist four beneficial effects of acute inflammation.	—	—	J10
2. Causes of lymphadenitis.	—	—	D19(RS3)
3. Granulomatous lymphadenitis.	—	—	J15(RS3)
4. Microscopy of tuberculous lymphadenitis.	—	—	J02
5. What is a stem cell? What are its types?	—	29	D15
6. False-positive VDRL reaction.	—	377	D12
7. Pneumonia alba.	—	378	J19(RS3)
8. Types of inflammation.	66	73	J09
9. Acute inflammation—definition, three major components, cardinal signs.	67	75	J08(RS2), D14(RS3), J17(RS3), F23(RS3), J00, J03, D06, D05, D11, D15
10. Vascular events of inflammation.	67	75	D19(RS3)
11. Define chemotaxis. Name two chemotactic agents.	71	90	M23(RS4), D09
12. Phagocytosis (name three steps).	71	80	J18(RS3), D00, J03, D03, J16
13. Opsonins (role in inflammation).	71	80	D01, D02, J04
14. Name the cell derived mediator of inflammation.	73	85	D00
15. Role of prostaglandins in acute inflammation.	74	86	D09
16. Thromboxane A_2.	75	87	J04
17. Platelet activation factor.	77	92	D10
18. Three methods of complement activation and its effector function in acute inflammation.	78	90	J06
19. Mast cell in inflammation.	80	85	D07
20. Primary mediators in mast cell granules.	80	85	J06, D13

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	HRMN	RBNS	
21. Macrophage in inflammation.	81	97	D14
22. Giant cells—what are the various types of giant cells? Name them and the conditions with which they are associated.	81	100	D11(RS2), D08, D12, J14
23. List four morphologic patterns of acute inflammation.	83	93	D08(RS2)
24. Draw a labeled diagram of an example of acute inflammation.	84	93	F22(RS4)
25. Ulcer.	83	94	J07(RS2), D11
26. Outcome of acute inflammation.	85	95	J07
27. List the histological features of chronic inflammation.	87	100	D01
28. Differences between acute and chronic inflammation.	86	—	D02
29. Chronic granulomatous disease.	87	101	J10
30. Granuloma (define/types with examples/microscopic appearance).	87	101	F24(RS4), D14(RS3), D19(RS3), J04, J08, D08
31. Epithelioid cell.	88	101	D00, J03
32. Chemicals of tuberculous bacilli responsible for producing granuloma.	—	368	D03
33. Microscopy of tuberculous granuloma with a diagram.	92	371	D06(RS2)
34. Ghon's lesion (primary complex)—components.	93	371	M22(RS4), M23(RS4), J09(RS2), D18(RS3), M21(RS3), D06, D08, D11
35. Fate of primary complex.	93	369	D06
36. Enumerate the pulmonary lesions in reactivation tuberculosis.	94	370	J00, J03
37. Miliary tuberculosis (pathways of spread).	95	373	D09, D11, J12

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	HRMN	RBNS	
38. Classification of leprosy.	99	374	J06
39. Mitsuda reaction.	99	—	D03
40. Tuberculoid leprosy—morphology.	100	374	M23(RS4), J18(RS3)
41. Lepromatous leprosy (microscopy).	100	374	D06(RS2), J15(RS3), D18(RS3), D07, J17
42. Lepra cell.	100	374	J05, J07
43. Primary chancre.	100	376	D13
44. Secondary syphilis	102	376	D11
45. Enumerate six lesions seen in cardiovascular syphilis.	102	376	D06(RS2)
46. Congenital syphilis (oral lesions).	102	376	J18(RS3), J19(RS3), D04
47. Manifestations of tertiary syphilis.	103	376	D10, J13
48. Actinomycosis.	103	—	J07
49. Sarcoidosis.	105	696	D00
50. Sarcoid granuloma (microscopy).	105	696	D02, D15
51. Granulation tissue.	108	105	J19(RS3), D05
52. Angiogenesis.	109	106	J07(RS2)
53. Factors influencing wound healing (factors promoting/factors which delay).	109	108	D19(RS3), J02, D08, D12
54. Primary wound healing (healing by first intention).	110	108	F23(RS4), J14
55. Complication of wound healing.	111	110	J04, D06, J08
56. Callus.	112	1184	J09
57. Complications of fracture healing of bone.	113	1185	D03

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	HRMN	RBNS	
Multiple Choice Questions			
1. Diapedesis is: a. Movement of leukocytes in the extravascular compartment **b. Immigration of the leukocytes through the vessel wall at the site of inflammation** c. Aggregation of lymphocytes at the site of bleeding d. Autodigestion of the cells	71	78	F23(RS4)
2. Vasoactive amines play an important role in vascular events of inflammation. Histamine causes all, *except:* a. Smooth muscle contraction **b. Decreased vascular permeability** c. Increased permeability d. Increased secretions	74	85	M23(RS4)
3. All are chemical mediators of acute inflammation, *except:* a. Histamine b. Prostaglandin c. Leukotrienes **d. Progesterone**	74	85	F24(RS4)
4. Granulomas seen in all, *except:* a. Tuberculosis b. Crohn's disease **c. Ulcerative colitis** d. Sarcoidosis	89	101	M23(RS4)
5. Ghon's focus seen in: a. Skin b. Tongue c. Brain **d. Subpleural lung**	93	371	F22(RS4)
6. Ghon's complex comprises of which one of the following: **a. Hilar lymphadenopathy** b. Apical fibrocavitatory lesion c. Miliary lesions across bilateral lungs d. Progressive primary lesions	93	371	F24(RS4)

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	HRMN	RBNS	
7. Hepar lobatum is seen in: a. Primary syphilis **b. Tertiary syphilis** c. Secondary syphilis d. Congenital syphilis	103	378	F22(RS4)
8. Which of the following is an example for labile cells? **a. Bone marrow** b. Hepatocytes c. Neurons d. Fibroblasts	108	103	M23(RS4)

CHAPTER 5

IMMUNOPATHOLOGY INCLUDING AMYLOIDOSIS

Long Essays

1. Classify and briefly describe hypersensitivity reactions. Describe the etiopathogenesis of systemic lupus erythematosus (autoimmunity in relation to SLE).	133, 140	204, 221	J07, J13
2. Define and classify amyloidosis. Describe the physical and chemical nature of amyloid. Describe the pathogenesis, morphology (gross and microscopic features of organs (spleen) involved in secondary amyloidosis) and (four special stains) staining characteristics of amyloidosis.	144, 146, 151, 150	259	J09(RS2), D10(RS2), D19(RS3), D00, D09

Short Essays

1. Transplant rejection reactions.	123	234	S21(RS3), J09
2. Graft-versus-host reaction.	123	239	D99, J11
3. HIV infection/acquired immunodeficiency syndrome (AIDS)—pathogenesis, laboratory diagnosis.	126	247	J07(RS2), D11(RS2), J02, J06

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