



All India Institute of Medical Sciences, Bhubaneswar
2nd Professional MBBS Supplementary Examination 2020 (Old Batch)
Time: 3 Hrs Pathology (Paper-I) Max. Marks: 75

Answer all the questions. Draw the diagrams wherever necessary. Use separate answer sheets for Section A & B.

Section - A

1. Write short answers:

(1x5=5)

- Define hypertrophy? Give two examples.
- Give two examples of exogenous pigments.
- Enlist two autosomal recessive disorders.
- Write in short the various pathways of metastasis and give one example of each pathway
- Define embolus. Enlist the various types of emboli with examples.

2. Write short answers:

(3x3=9)

- Define necrosis? Mention the different types of necrosis with examples.
- Classify the mediators of inflammation and briefly describe the role of plasma derived mediators.
- Draw a flow chart depicting the pathogenesis of thrombus.

3. Write short answers:

(3x3=9)

- Write in tabular form the differences between healing by primary intention and healing by secondary intention.
- Define tumor markers. Mention four tumor markers and the conditions where they are elevated.
- What is type-III hypersensitivity reaction? Give two examples of it?

4. A 25 years old female presented with primary amenorrhea. On examination she was short, with webbed neck, widely spaced nipple and infantile genitalia. (2+2+3=7)

- What is your clinical diagnosis? Give two reasons in support of your answer.
- What are the karyotype abnormalities of the above condition?
- Explain why "menopause occurs before menarche" in this condition.

(PTO)



Section – B

1. Write short notes:

(3x5=15)

- a. Draw the blood picture of chronic myeloid leukemia.
- b. Write in brief the relevant investigations you would like to do in a case of pancytopenia.
- c. Define and classify anemia.

2. Write short notes:

(3x5=15)

- a. Describe the pathogenesis of sickle cell disease. What is the inheritance pattern of this disease?
- b. Classify Hodgkin lymphoma and draw the pathognomonic cells seen in this condition.
- c. Discuss sickle cell anemia in respect to pathogenesis, peripheral blood findings and mode of inheritance.

3. An 8 years old boy with prominent cheek bones presented with anemia and jaundice. On examination, patient had splenomegaly and X-ray showed crew-cut appearance of the skull.

(2+2+1=5)

- a. What is your diagnosis and give reason in favour of your diagnosis?
- b. Write the peripheral smear findings.
- c. Mention the investigations you would suggest to confirm your diagnosis.

All India
2nd Professional
Time: 3 H

Write
Sh



All India Institute of Medical Sciences, Bhubaneswar
2nd Professional MBBS Supplementary Examination 2020(Old Batch)
Time: 3 Hrs Pathology (Paper-I) Max. Marks: 75

Section – C

Write the most appropriate answer (against the question Nos.: a/b/c/d) in the Main Answer Sheet (Section-A).

Multiple Choice Questions:

(1x10=10)

1. Chediak- Higashi syndrome is characterised by:
 - a. Absent MPO-H₂O₂ system
 - b. Defect in leucocyte adhesion
 - c. Defects in phagolysosome formation
 - d. Defects in microbicidal activity
2. Myasthenia gravis is an example of which type of hypersensitivity reaction:
 - a. Type I
 - b Type III
 - c. Type II
 - d. Type IV
3. Which genotype of HPV is responsible of cancer cervix:
 - a. HPV 16 & 11
 - b. HPV 16 & 18
 - c. HPV 8 & 6
 - d. HPV 9 & 31
4. Which of the following is a definitive feature of malignancy:
 - a. Increased cell proliferation
 - b. Cellular pleomorphism
 - c. High vascularity
 - d. Presence of metastasis
5. NK cells are identified by:
 - a. CD16 & CD56
 - b. CD8 & CD56
 - c. CD4 & CD16
 - d. CD4 & CD8
6. In case of renal failure on long-term haemodialysis, there is development of following type of amyloid:
 - a. Amyloid light chain (AL)
 - b. Amyloid-associated protein (AA)
 - c. Amyloid β 2 microglobulin (A β 2m)
 - d. β amyloid protein (A β)
7. In cold antibody autoimmune haemolytic anaemias, the antibody commonly seen is:
 - a. IgA
 - b. IgG
 - c. IgM
 - d. IGD
8. Verocay bodies are seen in:
 - a. Schwannoma
 - b. Neurofibroma
 - c. Meningioma
 - d. Astrocytoma
9. Marfan syndrome is associated with mutation in the gene encoding which of the following
 - a. Collagen
 - b. Elastin
 - c. Fibrillin
 - d. Fibronectin
10. Couple with a family history of thalassemia have come for counselling. Husband has HbA2 of 4.85%, wife has HbA2 of 2.3%. The risk of having a child with beta thalassemia major is:
 - a. 50%
 - b. 25%
 - c. 5%
 - d. 0%



All India Institute of Medical Sciences, Bhubaneswar
2nd Professional MBBS Supplementary Examination 2020 (Old Batch)
Time: 3 Hrs Pathology (Paper-II) Max. Marks: 75

Answer all the questions. Draw the diagrams wherever necessary. Use separate answer sheets for Section A & B.

Section - A

1. Write short answers:

(1x5=5)

- Briefly mention the risk factors of atherosclerosis.
- Mention two important conditions causing malabsorption and diarrhoea.
- Mention the different types of renal stones.
- Mention two diseases associated with *H.pylori*.
- Mention two benign neoplasms of salivary gland.

2. Write short notes:

(5x4=20)

- Write in tabular form the differences between ulcerative colitis and Crohn disease.
- Define and classify emphysema. Write in short, the pathogenesis of the above condition.
- Enlist the risk factors and describe the pathogenesis of gall stones.
- Write in tabular form the differences between autoimmune and *H.pylori* gastritis.
- Mention the causes and clinical consequences of portal hypertension.

3. A 10-year-old boy presented with puffiness of face and pedal oedema. Urine examination showed massive proteinuria

(1+2+2=5)

- What is your probable diagnosis?
- What investigations you would like to do in this case.
- What is the renal biopsy likely to show on microscopy.



Section – B

1. Write short notes:

(4x4=16)

- a. Mention the cell of origin and classify meningioma.
- b. Classify the germ cell tumors of testis and describe the components found in teratoma.
- c. Mention the types of thyroid neoplasms. Describe the gross and the microscopic features of papillary carcinoma of thyroid.
- d. Write in short the molecular classification of breast cancer.

2. Write short notes:

(4x3=12)

- a. Define osteomyelitis, mention the causes and the morphological changes in chronic osteomyelitis
 - b. What are the risk factors for developing endometrial carcinoma and write in tabular form the differences between type I and type II endometrial carcinoma?
 - c. Classify bone tumours and write in brief about Ewing sarcoma.
3. 60-year-old female presenting with bleeding per vaginum. Per speculum examination shows a fungating growth at external os of cervix. **(3+4=7)**
- a. What is your provisional diagnosis and give 2 reasons in support of your diagnosis.
 - b. Describe the pathogenesis of the above condition.



All India Institute of Medical Sciences, Bhubaneswar
2nd Professional MBBS Supplementary Examination 2020 (Old Batch)
Time: 3 Hrs Pathology (Paper-II) Max. Marks: 75

Section – C

Write the most appropriate answer (against the question Nos. : a/b/c/d) in the Main Answer Sheet (Section-A).

Multiple Choice Questions:

(1x10=10)

1. Long term assessment of diabetes is provided by the following investigation:
 - a. Whole blood glucose estimation
 - b. Plasma glucose estimation
 - c. Capillary method of glucose estimation
 - d. Glycosylated haemoglobin

2. The etiologic agent for Creutzfeldt-Jakob disease is:
 - a. HIV
 - b. JC virus
 - c. Prions
 - d. Varicella virus-zoster

3. A one-year old female child presented with an abdominal mass. Her 24-hour urinary levels of metanephrine are elevated. Histopathology of the resected mass shows the tumor composed of numerous proliferating small round blue cells with occasional Homer-Wright rosettes. Which of the following is the most likely diagnosis?
 - a. Nephroblastoma
 - b. Hepatoblastoma
 - c. Neuroblastoma
 - d. Osteoblastoma

4. The EARLIEST serological marker of acute viral hepatitis B infection is:
 - a. Anti HBs antibody
 - b. IgM anti HBs antibody
 - c. IgM anti HBc antibody
 - d. IgM anti HBe antibody

5. A 40-year-old male presents with cough, haemoptysis and features of glomerulonephritis. His c-ANCA levels in serum were found to be raised. The most likely diagnosis is:
 - a. Goodpasture syndrome
 - b. Polyarteritis nodosa
 - c. Wegener granulomatosis
 - d. Kawasaki syndrome

6. Which of the following is NOT a constituent of the glomerular filtration barrier?
 - a. Basement membrane
 - b. Podocytes
 - c. Parietal epithelial cells
 - d. Endothelial cells



7. Back wash ileitis is seen in:
- Crohn disease
 - Ulcerative colitis
 - Colonic carcinoma
 - Ileal polyp
8. Bilateral breast carcinoma is commonly seen in:
- Medullary carcinoma
 - Lobular carcinoma
 - Mucinous carcinoma
 - Ductal carcinoma
9. Nutmeg liver is a feature classically described in:
- Acute viral hepatitis
 - Chronic venous congestion
 - Wilson disease
 - Cirrhosis
10. The nodules in micronodular cirrhosis are:
- < 3mm
 - < 5 mm
 - < 10 mm
 - < 2 mm



All India Institute of Medical Sciences, Bhubaneswar

2nd Professional MBBS Supplementary Examination 2020 (Batch 2017)

Time: 3 Hrs

Pathology (Paper-I)

Max. Marks: 100

Instructions: Answer all the questions. Draw neat labelled diagram wherever necessary. The subparts of a question must be answered together. Use separate answer sheets for Section 'A' & 'B'

SECTION – A

1. A 35-year-old man was brought to casualty because he collapsed at work, He was confused, and had pallor, cold clammy extremities, tachypnea, tachycardia and hypotension. A diagnosis of shock was made. (2+3+5=10)
 - a) What do you understand by the term “shock”?
 - b) Name the main types of shock, and one cause of each
 - c) List the stages of shock and the main pathophysiologic events in each stage

2. Answer the following questions briefly, using diagrams wherever applicable. (5x5=25)
 - a) List the pigments that accumulate in cells and discuss any two briefly.
 - b) Define apoptosis. Give two examples each of physiologic and pathologic apoptosis. (3+2=5)
 - c) Define the following terms, and draw diagrams to illustrate each: (2.5+2.5=5)
 - i. Granuloma
 - ii. Granulation tissue
 - d) Define an embolus. Give a brief account of systemic thromboembolism.
 - e) Name three organs involved in hydatid disease. Describe the gross and microscopic appearance of a hydatid cyst.

3. Answer the following questions briefly, using diagrams wherever applicable. (3x5=15)
 - a) Tabulate the differences between primary and secondary tuberculosis.
 - b) Briefly discuss the categories of genes that are associated with cancer.
 - c) Tabulate the major pathophysiologic mechanisms by which transudative oedema occurs. Name one condition associated with each mechanism. What is anasarca?



SECTION-B

1. A 60-year-old man presented with low back pain. An X-ray showed multiple lytic lesions. His ESR was found to be elevated to 100 mm/hr. (1+5+4=10)
- What is your likely diagnosis?
 - What laboratory tests would you do to confirm the diagnosis?
 - Discuss the peripheral smear and bone marrow findings in this case?
2. Answer the following questions briefly using diagrams wherever applicable. (5x5=25)
- Discuss chronic lymphocytic leukemia with respect to the
 - age at presentation (1)
 - peripheral blood findings (2)
 - course of disease (2)
 - Give a brief account of aplastic anemia, in regard to etiology and laboratory features.
 - What are the organs typically involved in sporadic and endemic Burkitt lymphoma? (2)
 - What is the behaviour of this tumour? (1)
 - What is the genetic abnormality associated with this tumour? (1)
 - What is the organism associated with the development of this tumour? (1)
 - Discuss hereditary spherocytosis under the following headings:
 - Peripheral blood findings (1)
 - Laboratory diagnosis (1)
 - Mode of inheritance (1)
 - Clinical features (2)
 - What are the causes of iron deficiency anemia? What will happen to red cell indices like MCV, MCH, MCHC, RDW? (3+2=5)
3. Answer the following questions briefly, using diagrams wherever applicable. (3x5=15)
- Draw a diagram to illustrate the differentiation of haemopoetic cells.
 - Write a short note on sickle cell anemia.
 - Tabulate the differences between Hodgkin and non-Hodgkin lymphoma.



All India Institute of Medical Sciences, Hubaneswar

2nd Professional MBBS Supplementary Examination 2020 (Batch 2017)

Time: 3 Hrs

Pathology (Paper–II)

Max. Marks: 100

Instructions: Answer all the questions. Draw neat labelled diagram wherever necessary. The subparts

of a question must be answered together. Use separate answer sheets for Section 'A' & 'B'

SECTION – A

1. A 10-year-old boy underwent a renal biopsy because he presented with haematuria, mild proteinuria and hypertension. He had a history of fever and sore throat three weeks earlier.
(1+5+3+1=10)
 - a) What is the term given to describe the constellation of features seen at presentation?
 - b) What is the renal biopsy likely to show on microscopy?
 - c) What is this picture due to?
 - d) What is the most likely outcome?
2. Answer the following questions briefly using diagrams wherever applicable. (5×5=25)
 - a) Describe the microscopic features of chronic hepatitis B.
 - i. Describe the typical site and behaviour of pleomorphic adenoma of the salivary gland. (2)
 - ii. What is its gross appearance? (1)
 - iii. Draw a diagram to illustrate its microscopic appearance. (2)
 - b) i. What do you understand by the term primary tuberculosis? (1)
 - ii. Describe the location and gross appearance of the lung lesion in primary tuberculosis. (3)
 - iii. What is the typical outcome of primary tuberculosis? (1)
 - c) i. What are the causes of congestive splenomegaly? Describe the gross and microscopic findings in chronic venous congestion of the spleen. (2+3=5)
 - ii. Write brief notes on small cell carcinoma of lung with respect to its
i. risk factor (1)
ii. location (1)
iii. typical microscopic features (3)
3. Answer the following questions briefly, using diagrams wherever applicable. (3×5=15)
 - a) i. Name two risk factors associated with a benign gastric ulcer? (1)
 - ii. Draw a diagram to illustrate the typical microscopic features of a chronic gastric ulcer. (4)
 - b) Describe the gross and light microscopic findings seen in the heart in the first seven days after a myocardial infarct.
 - c) Mention the site of origin, radiological features and microscopic findings in giant cell tumour of bone



SECTION – B

1. A 45-year-old lady presented with vaginal bleeding and dyspareunia. Physical examination showed a slight irregularity of surface of the cervix. A hysterectomy was done and histopathological examination was consistent with a diagnosis of carcinoma of the cervix.
- a) What are the risk factors associated with this condition? **(2+2+2+2=10)**
b) Name the subtypes of the virus associated with this condition?
c) What are the possible gross appearances?
d) What is the histological appearance of the majority of such tumours?
e) What is carcinoma in situ and microinvasive carcinoma of the cervix?
2. Answer the following questions briefly using diagrams wherever applicable. **(5x5=25)**
- a) Tabulate the different types of calculi seen in the kidney, and the factors that predispose to the development of each type.
b) i. Describe the gross and microscopic findings seen in pyogenic osteomyelitis. **(3)**
ii. What is its most common causative agent? **(1)**
iii. Name two sequelae of this condition. **(1)**
c) Describe Hashimoto thyroiditis in regard to
i. Etiology **(2)**
ii. Gross and microscopic findings. **(2)**
iii. Common complication. **(1)**
d) i. Draw a diagram to illustrate the microscopic findings of benign cystic teratoma of the ovary. **(3)**
ii. What is struma ovarii? **(2)**
e) Discuss the gross and microscopic findings of benign hyperplasia of the prostate.
3. Answer the following questions briefly, using diagrams wherever applicable. **(3x5=15)**
- a) Discuss basal cell carcinoma with respect to its
i. predisposing factors **(1)**
ii. typical location and **(1)**
iii. behaviour **(1)**
iv. microscopic appearance **(2)**
- b) With respect to carcinoma of the urinary bladder.
i. Name two factors that predispose to this tumour **(2)**
ii. What are the gross and microscopic findings? **(3)**
c) Mention the different
i. Vegetations seen in endocarditis? **(2)**
ii. Draw the labelled diagram to depict the same? **(3)**



All India Institute of Medical Sciences, Bhubaneswar
2nd Professional MBBS Final Examination 2020 (Batch - 2018)

Time: 3 Hrs

Pathology (Paper-I)

Max. Marks: 100

Instructions: Answer all the questions. Draw neat labelled diagram wherever necessary. The subparts of a question must be answered together. Use separate answer sheets for Section 'A' & 'B'.

Section - A

1) A 25-year-old female presented with altered sensorium. On examination she was found to have a warm and flushed skin, and later developed severe hypotension and multiorgan failure. Blood culture of the patient revealed gram negative bacteria. (10)

- What is your provisional diagnosis? (1)
- Discuss the etio-pathogenesis of this condition (4)
- Describe the morphology of the vital organs affected by this condition. (3)
- What are its clinical phases and complications that may arise due to this condition (2)

2) Answer the following questions with appropriate illustrations wherever applicable (4x5=20)

- Describe the mechanism of phagocytosis.
- Briefly describe the structure and types of amyloid.
- Define paraneoplastic syndrome. Give examples.
- Describe the pathogenesis and presentation of Down syndrome.

3) Answer the following questions with appropriate illustrations wherever applicable (4x5=20)

- Compare and contrast between apoptosis and necrosis.
- Define a granuloma. Briefly describe the etio-pathogenesis of granulomas.
- What are MHC molecules. Illustrate their role in immunity.
- Describe the pathogenesis of cellular ageing.



Section - B

1) A 10-year-old child complains of sudden onset fever, bleeding from gums and nose and purpura. On examination he was found to have severe pallor, generalized lymphadenopathy, and hepatosplenomegaly. (10)

- a) What is the possible diagnosis? (1)
- b) What are the expected peripheral smear and bone marrow findings in this patient? (4)
- c) What are other laboratory investigation required for confirmation of diagnosis? (2)
- d) What are the prognostic indicators of this disease? (3)

(4x5=20)

2) Short answer type question:

- a) Describe the pathogenesis of paroxysmal nocturnal hemoglobinuria. Enumerate the laboratory tests for its diagnosis.
- b) Enumerate the causes of pancytopenia. Describe the Etiology and bone marrow findings in aplastic anemia.
- c) Briefly describe the iron metabolism. Enumerate the causes of iron deficiency anemia.
- d) Mention the laboratory findings in case of Multiple myeloma and mention it's WHO diagnostic criteria.

(4x5=20)

3) Short answer type question:

- a) Classify haemolytic anemias.
- b) Describe the pathogenesis of Idiopathic Thrombocytopenic purpura.
- c) What are the types of Hodgkin Lymphoma? Illustrate a Reed-Sternberg cells.
- d) Briefly mention the features of Glucose-6-phosphate Dehydrogenase Deficiency disease.

SECTION-A

1. A 7-year-old male child presented with decreased urine output, facial puffiness, and passage of cola coloured urine; 15 days after an upper respiratory tract infection. On examination, his blood pressure was found to be elevated (140/90 mm Hg). His 24-hour urinary protein was 2 gm/day and serum complement level was found to be low. (2+4+4=10)
 - a) What is the most probable diagnosis? Explain with reasons.
 - b) Briefly outline the underlying pathophysiologic mechanism in this condition.
 - c) What are the microscopic findings noted in examination of urine and renal biopsy?

2. Answer the following questions with appropriate illustrated diagrams wherever applicable. (8x5=40)
 - a) What are the risk factors and precancerous lesions for development of skin cancers. Draw a labelled diagram depicting the morphological features of basal cell carcinoma.
 - b) Discuss the risk factor of atherosclerosis and its pathogenesis.
 - c) Enumerate the bone tumors which arise from epiphysis. Discuss X-ray appearance and morphology of giant cell tumor of bone.
 - d) What are the different laboratory methods used for diagnosis of cancer? Write a brief note on cervical intraepithelial neoplasia (CIN) screening.
 - e) What are the different hormones responsible for regulation of menstrual cycle? Draw a labelled diagram depicting the proliferative and secretory phase of endometrium.
 - f) Enumerate the four causes of obstructive uropathy. Briefly outline the gross and microscopic appearance of chronic pyelonephritis.
 - g) How will you classify ovarian tumors? Discuss the microscopic morphology of dysgerminoma and the special stain useful in this.
 - h) What are the diagnostic criteria for diabetes mellitus? Briefly outline the pathophysiologic mechanism leading to diabetic micro and macroangiopathy.



SECTION-B

1. What are the hepatotropic viruses and their mode of transmission? Discuss the morphology of acute and chronic viral hepatitis with appropriate schematic diagram. Briefly outline the sequential changes in serological markers in hepatitis B and C infection. (2+4+4=10)
2. Answer the following questions with appropriate illustrated diagrams wherever applicable. (8x5=40)
 - a) Enumerate the risk factors for pulmonary infections. Compare and contrast the etiology, gross and microscopic pathology of lobar and bronchopneumonia.
 - b) Enumerate common benign salivary gland tumors. What are the morphological characteristic features of pleomorphic adenoma?
 - c) What are the stains used to demonstrate H pylori in tissue sections? Briefly outline the virulence mechanism and morphology in H pylori associated gastritis.
 - d) Define infarction. Briefly outline the sequential morphological changes seen in acute myocardial infarction.
 - e) Briefly outline the recent classification and clinical significance of hepatic adenoma.
 - f) Enumerate the different types of gall stones with examples. Briefly highlight the pathogenesis of gall stone formation.
 - g) Draw a labelled diagram depicting the colorectal adenoma-carcinoma sequence and the molecules involved in it.
 - h) Define aneurysms with examples? Discuss the risk factors in the aneurysm formation and its complications.



All India Institute of Medical Sciences, Bhubaneswar
2nd Professional MBBS Final Examination 2019 (Batch - 2017)
Time: 3 Hrs Pathology (Paper-I) Max. Marks: 100

Instructions: Answer all the questions. Draw neat labelled diagram wherever necessary. The subparts of a question must be answered together. Use separate answer sheets for Section 'A' & 'B'.

Section - A

- 1) A 25-year-old female presented with fever joint pain & erythematous rash on face and bridge of nose. (10)
 - a) What is your provisional diagnosis? (1)
 - b) Mention the different types of anti-nuclear antibodies (ANAs) found in this condition (2)
 - c) Mention the methods used for detecting the anti-nuclear antibodies (2)
 - d) Enumerate the important organs affected by the above condition (2)
 - e) Mention the types of nephritis seen in this condition. (3)

- 2) Answer the following questions with appropriate illustrations wherever applicable (4x5=20)
 - a) Describe the mechanism of fracture healing
 - b) Define apoptosis? Describe the mechanism of apoptosis with a schematic diagram. Give 2 examples of physiological apoptosis.
 - c) Define neoplasia. Name 3 viruses implicated in oncogenesis and describe the mechanism of oncogenesis in any one.
 - d) Define necrosis. Discuss the morphological patterns of tissue necrosis.

- 3) Answer the following questions with appropriate illustrations wherever applicable (4x5=20)
 - a) Describe the cellular changes in acute inflammation.
 - b) What is amyloidosis? What is the pathogenesis of amyloidosis seen in association with multiple myeloma? What is the reason for an apple green birefringence of amyloid on Congo Red stain?
 - c) What is a Type IV hypersensitivity reaction? Provide a schematic illustration of the evolution of a tuberculous granuloma.
 - d) What is Virchow triad? Explain how any one of the components of the triad influence thrombus formation.



Section - B

1) A 10-year-old child is brought to you because of on and off pain in his limbs. He has recurrent respiratory infections which exacerbate the pain. The physical examination shows pallor and mild icterus. There is a positive family history for similar ailments. An ultrasound abdomen showed cholelithiasis and shrunken spleen. (10)

- a) What is the possible diagnosis? (2)
- b) What are the complications that can be associated with this condition? (4)
- c) What are the peripheral smear findings and laboratory tests useful for diagnosis? (4)

(4x5=20)

2) Short answer type question:

- a) Describe the pathogenesis of hereditary spherocytosis. What is the inheritance pattern of this disease?
- b) Classify Thalassemia and describe in brief the morphology of this disease condition.
- c) What are the two principal causes of megaloblastic anaemia? With the help of a diagram highlight the morphological features of this form of anaemia.
- d) What is meant by Philadelphia chromosome? Draw the blood picture of chronic myeloid leukaemia.

(4x5=20)

3) Short answer type question:

- a) What is intravascular and extravascular hemolysis? Give two examples of each.
- b) What is aplastic anaemia? Classify the causes. What will be the peripheral blood picture and microscopic appearance of the bone marrow aspirate?
- c) What is Down syndrome? What are the characteristic features of this syndrome?
- d) What is cystic fibrosis and what happens to secretions in this condition? What are the changes that one can see in the lung in a patient with cystic fibrosis?

Instructions: Answer all the questions. Draw neat labelled diagram wherever necessary. The subparts of a question must be answered together. Use separate answer sheets for Section 'A' & 'B'.

Section - A

- 1) A 65-year-old obese man presents to the Emergency Room with sudden onset of severe chest pain has a cardiac arrest and cannot be resuscitated. His lipid profile from a previous visit shows that he had hypercholesterolemia. At autopsy the aorta shows whitish yellow plaques and his coronary arteries are markedly narrowed. (10)
 - a) What is the pathology affecting his arteries? (2)
 - b) What are the risk factors and what is the pathogenesis of this condition? (3)
 - c) Draw a schematic diagram of the microscopic appearance of the wall of aorta in a section taken from the plaque (3)
 - d) Enumerate the complications that can ensue from this condition (2)

- 2) Answer the following questions with appropriate illustrations wherever applicable (4x5=20)
 - a) Discuss the histopathological features of chronic hepatitis. Name the microorganisms associated with this condition
 - b) Describe the pathology of the kidney in diabetes mellitus
 - c) Describe the gross and microscopic features in the heart in the first 10 days after a myocardial infarction
 - d) What are the surface epithelial tumours of the ovary? Describe any one of the tumours briefly.

- 3) Answer the following questions with appropriate illustrations wherever applicable (4x5=20)
 - a) Classify Hodgkin Lymphoma and describe the histological features of any one subtype.
 - b) Name the pre malignant conditions of skin and describe the pathology of any one
 - c) Name the entities that are collectively called inflammatory bowel disease. Describe the gross and microscopic features of any one of them
 - d) What is cholelithiasis and what are the types seen? Discuss in brief the risk factors and pathogenesis of cholelithiasis.



Section - B

- 1) A 45-year-old pre-menopausal lady presents with a mass in the upper outer quadrant of the right breast. A fine needle aspiration reveals clusters of pleomorphic cells with mitotic activity. (10)
 - a) What is the most probable diagnosis? Name three risk factors implicated in this disease(2)
 - b) What are the histological subtypes? Draw a labelled diagram of any one histological subtype (4)
 - c) Enumerate the prognostic variables that influence the clinical course of this disease. (4)
- 2) Answer the following questions with appropriate illustrations wherever applicable (4x5=20)
 - a) Describe the differences both on gross appearance and microscopy between a typhoid ulcer and a tuberculous ulcer. What are the complications that can ensue from each.
 - b) What is cervical intraepithelial neoplasia and describe its grading. What are the risk factors implicated in the development of cervical intraepithelial neoplasia?
 - c) Classify bone forming tumours and describe the gross and microscopic features of a malignant bone forming tumour.
 - d) What is Hashimoto thyroiditis? Describe the pathogenesis with the help of a schematic diagram.
- 3) Answer the following questions with appropriate illustrations wherever applicable (4x5=20)
 - a) What is the pathogenesis of tuberculous meningitis? What are the gross and microscopic features of tuberculous meningitis? Name any two complications that can ensue in an untreated case of tuberculous meningitis
 - b) What is the aetiology, pathogenesis and key morphological changes of acute rheumatic heart disease?
 - c) What is emphysema? Classify emphysema. With the help of a schematic diagram discuss the pathogenesis of emphysema.
 - d) What are the risk factors of oral cancer? Describe the microscopic features of a well differentiated squamous cell carcinoma.

Instructions: Answer all the questions. Draw neat labelled diagram wherever necessary. The subparts of a question must be answered together. Use separate answer sheets for Section 'A' & 'B'. Section 'C' should be answered in the answer sheet used for the Section 'B'.

Section - A

1. Short answer questions: [3x5=15]
- Mention the difference between the CSF findings of tubercular and pyogenic meningitis in a tabular form.
 - Mention the risk factors for atherosclerosis.
 - Define cirrhosis and mention the important causes and draw a labelled diagram of the microscopic features of cirrhosis of liver?
2. Short notes: [5x3=15]
- Mention the different types of vegetation seen on heart valves.
 - Four important causes of fatty liver.
 - Describe the stages of lobar pneumonia.
 - Mention the various types of gall stones and the mechanism of stone formation.
 - Mention the vascular complications of diabetes mellitus.
3. 35-year-old female presented with constricting pain in the chest and profuse sweating. Coronary angiogram showed left anterior descending artery occlusion. [2+3=5]
- What is the diagnosis? [2]
 - Discuss the gross and microscopic appearance in this condition .[3]

Section – B

1. Write short notes on: [8x3=24]
- Classification of germ cell tumor of testis.
 - Morphology & pathogenesis of rheumatoid arthritis
 - Benign proliferative breast disease.
 - Hashimoto thyroiditis.
 - Phyllodes tumor of breast.
 - Pneumoconiosis.
 - Meningioma.
 - Differences between partial and complete mole.



2. A 30-year male patient presented with swelling of upper end of tibia. X-ray showed a lytic lesion with soap bubble appearance in the epiphysis of tibia. [1+2+3=6]

- a) What is your diagnosis? [1]
- b) Draw a diagram depicting the microscopic findings of this tumor. [2]
- c) Write the classification of bone tumors. [3]

#####



All India Institute of Medical Sciences, Bhubaneswar
2nd Professional MBBS Final Examination 2019 (Old Batch)
Pathology Paper - II

Section - C

(10x1=10)

Multiple Choice Questions:

1. A one-year old female child presented with an abdominal mass. Her 24 hour urinary levels of metanephrine are elevated. Histopathology of the resected mass shows the tumor composed of numerous proliferating small round blue cells with occasional Homer-Wright rosettes. Which of the following is the most likely diagnosis?

- a. Nephroblastoma
- b. Hepatoblastoma
- c. Neuroblastoma
- d. Osteoblastoma

2. Which of the following is NOT a constituent of the glomerular filtration barrier?

- a. Basement membrane
- b. Podocytes
- c. Parietal epithelial cells
- d. Endothelial cells

3. Back wash ileitis is seen in:

- a. Crohn disease
- b. Ulcerative colitis
- c. Colonic carcinoma
- d. Ileal polyp

4. Which of the following is a marker for GIST?

- a. CD 10
- b. S-100
- c. CD 1a
- d. CD 117

(P. T. O)



5. Bilateral breast involvement is commonly seen in which of the following?

- a. Medullary carcinoma
- b. Lobular carcinoma
- c. Mucinous carcinoma
- d. Ductal carcinoma

6. Which of the following is a diagnostic feature in primary biliary cirrhosis?

- a. Raised p-ANCA
- b. Raised anti mitochondrial antibody
- c. Raised anti Smith antibody
- d. Raised c-ANCA

7. The following thyroid cancer is a neuroendocrine tumour:

- a. Papillary carcinoma
- b. Follicular carcinoma
- c. Medullary carcinoma
- d. Anaplastic carcinoma

8. Nutmeg liver is a feature classically described in:

- a. Acute viral hepatitis
- b. Chronic venous congestion
- c. Wilson disease
- d. Cirrhosis

9. The following conditions are premalignant except:

- a. Solar keratosis
- b. Seborrheic keratosis
- c. Bowen disease
- d. Xeroderma pigmentosum

10. Codman triangle appearance on X-ray of bone is characteristic of:

- a. Osteochondroma
- b. Osteoclastoma
- c. Osteosarcoma
- d. Osteoid osteoma



All India Institute of Medical Sciences, Bhubaneswar
2nd Professional MBBS Final Examination 2019 (Old Batch)

Time: 3 Hrs Pathology (Paper-I) Max. Marks: 75

Instructions: Answer all the questions. Draw neat labelled diagram wherever necessary. The subparts of a question must be answered together. Use separate answer sheets for Section 'A' & 'B'. Section 'C' should be answered in the answer sheet used for the Section 'B'

Section – A

Answer all the question. Draw labelled diagram wherever necessary:

[5x2=10]

1. Short answer questions:

- a) What is Virchow triad?
- b) Mention the different modes of metastasis.
- c) Enumerate the opportunistic infections seen in AIDs.
- d) What is a granuloma? Give two examples of non-caseating granuloma.
- e) Define hyperplasia and mention its type with one example from each.

2. Short notes:

[5x3=15]

- a) Mention the differences between apoptosis and necrosis in a tabular form.
 - b) Draw a labeled diagram depicting the different steps of leukocyte recruitment to site of inflammation.
 - c) Describe the types of hypersensitivity reactions with one example from each.
3. 35-year-old female presented with fever, joint pain & erythematous rash on face and bridge of nose.
- [1+3+3+3=10]**
- a) What is your provisional diagnosis?
 - b) Mention the types of antibodies found in this condition.
 - c) Enumerate the important organs affected by the above condition.
 - d) Mention the types of nephritis seen in this condition.

Section – B

1. Short answer questions:

[5x4=20]

- a) Mention four important causes of pancytopenia.
- b) Draw a labelled diagram of the pathognomonic cells of Hodgkin lymphoma.
- c) Write short note on Hemophilia A.
- d) Mention the peripheral smear and bone marrow findings of megaloblastic anemia.
- e) Define stem cells and mention two important indications of hematopoietic stem cell transplantation.



2. A 60-year male came to the hospital with C/O fever, weakness, and abdominal distension for past few months. On examination, there was anemia and abdominal splenomegaly. Routine hematological investigations revealed.
Hb = 9.0 gm/dl
TLC = 1,10,500/mm³
PTC = 4 lakhs/mm³

- What is your diagnosis and why?
- Draw a labelled diagram of the peripheral smear findings seen in this case.
- Mention the chromosomal translocation seen in the above case.
- What are the different phases of the disease?

[2+4+1+3=10]
