

Reg. No.

MANIPAL ACADEMY OF HIGHER EDUCATION
MELAKA MANIPAL MEDICAL COLLEGE (MANIPAL CAMPUS)
MBBS PHASE – I STAGE – II DEGREE EXAMINATION – MARCH 2018
SUBJECT : PATHOLOGY – PAPER I (ESSAY)

Saturday, March 10, 2018

Time : 9.00 a.m.- 11.00 a.m.

Max. Marks : 60

- ✓ **Answer all the questions**
- ✓ **Write the question number clearly in the margin**
- ✓ **Draw diagrams wherever appropriate**

1. In a tabular format compare apoptosis and necrosis with suitable examples. (5 marks)

2. A small splinter of wood was embedded in the finger of a 25 year old carpenter. After 5 days the affected finger was red, swollen and painful. The doctor does an incision and drainage of the pus. Explain the cellular events involved in the formation of pus. (5 marks)

3. A 10 year old male child was admitted in the hospital with bleeding gums, ecchymotic patches over the body and hematuria. Compare the inheritance, aetiopathogenesis and laboratory diagnosis of two inherited bleeding disorders that are possible in this child. ($\frac{1}{2}+2\frac{1}{2}+2 = 5$ marks)

4. Describe the steps of metastatic cascade with the help of a diagram. (5 marks)

5. Compare the characteristic features of Crohn's disease and ulcerative colitis in a tabular format. (5 marks)

6. Describe the aetiology and morphology of hepatocellular carcinoma. (3+2 = 5 marks)

7. Describe the clinicopathological features of malignant melanoma. (5 marks)

8. Classify CNS tumours. Discuss the clinicopathological features of astrocytoma. (2+3 = 5 marks)

9. Describe the pathogenesis of atherosclerosis and the types of atheromatous lesions. (3+2 = 5 marks)

10. Write the histological classification of primary lung carcinoma. Discuss the aetiology and morphology of a common type of primary lung carcinoma.
(2+1+2 = 5 marks)
11. Classify ovarian tumours. Describe the gross and microscopic features of mature cystic teratoma.
(3+2 = 5 marks)
12. David, a 55 year old bus driver who was a diabetic since 20 years, developed pedal edema and proteinuria. He has not been taking his oral hypoglycaemics regularly. His kidney biopsy showed a spectrum of pathological changes. Describe the expected kidney biopsy findings and its pathogenesis.
(5 marks)



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SUBJECT : PATHOLOGY – PAPER II (MTF)

Saturday, March 10, 2018

Time : 11.30 a.m. - 12.30 p.m..

Max. Marks : 120

INSTRUCTIONS

1. For each statement, select T (True) or F (False) as your choice.
2. Indicate your choice by darkening the appropriate circle in the answer sheet provided.
3. Use only HB or 2B pencils to darken the circle.
4. Leave blank for Don't Know response.
5. Scoring systems is as follows :
 - For every **Correct** response **1** mark is awarded
 - For every **Wrong** response **0.5** mark is deducted
 - For every **Don't Know** response **No** mark is deducted
6. Indicate your Roll Number (Registration Number) clearly and correctly.
7. Do not write anything in the question paper.
8. The true/false statements are numbered 101 to 160 and 201 to 260 (Total 120 statements).
9. This question paper contains **04 pages**. Please make sure that the question paper provided to you has all the pages.

The cytokines and their role in granulation tissue formation are correctly matched

101. Keratinocyte growth factor: Neovascularisation
102. Platelet derived growth factor (PDGF): Proliferation of fibroblasts
103. Vascular endothelial growth factor (VEGF): Angiogenesis

The following terms are correctly defined

104. Chronic: Persisting for a long time
105. Pathognomonic: The mechanism of the disease by which the clinical manifestations are produced
106. Dysplasia: The increase in cell number and cell size in response to physiological stimuli
107. Regeneration: Formation of new cells identical to those lost.

Regarding fatty change

108. Pregnancy is a cause of fatty change
109. The affected cells show accumulation of fluid in the cell cytoplasm
110. "Oil Red O" is a special stain to demonstrate fat

The cardinal signs of acute inflammation include

111. Calor
112. Pallor
113. Dolor
114. Tumor

Regarding chronic inflammation

115. Plasma cells and macrophages are the predominant cells
116. Fibrinous pericarditis is a type of chronic inflammation
117. Suppurative type of inflammation often progresses to chronic inflammation
118. Amyloidosis may be a late complication

Beneficial effects of acute inflammation include

119. Dilution of toxins
120. Fibrin formation
121. Transport of drugs
122. Exudate formation

Sickle cell anaemia

123. Is an example of production failure anaemia
124. Occurs due to substitution of valine for glutamic acid in position 6 of beta-globin chain
125. Causes severe pain in long bones due to ischaemia
126. Can result in auto splenectomy

Regarding acute leukaemia

127. Acute lymphoblastic leukaemia is more common in children
128. Gum hypertrophy is a feature seen in acute monoblastic leukaemia
129. Acute myeloid leukaemia shows <20% blasts in bone marrow
130. Myeloperoxidase staining is positive in acute myeloid leukaemia

The laboratory investigations of a 29 year old pregnant female are as follows: Hb-7mg/dl, PCV-24%, MCV-70fl, MCH-24pg, RDW-17

131. The patient has iron deficiency anaemia
132. The RBC count in this case would be 6.0×10^{12} /litre
133. The cause of the anaemia is chronic blood loss

Clinical effects of tumours include

134. Weight gain
135. Anaemia
136. Cachexia
137. Cyanosis

Regarding the nomenclature of tumours

138. Rhabdomyosarcoma: Malignant tumour of striated muscle
139. Chondroma: Benign tumour of smooth muscle
140. Lymphoma: Benign tumour of lymphoid tissue

Regarding oesophageal carcinoma

141. Patients present with dysphagia in the early stages of the disease
142. Squamous cell carcinoma is seen in the lower third of the oesophagus
143. Barrett's oesophagus predisposes to adenocarcinoma
144. It is associated with a high dietary intake of tannic acid

Duodenal ulcer is

- 145. Associated with Helicobacter pylori infection
- 146. Common in older patients
- 147. A premalignant lesion
- 148. Due to hyperacidity

Intestinal tuberculosis

- 149. Affects predominantly the large intestine
- 150. Is complicated by strictures
- 151. Is a complication of pulmonary tuberculosis
- 152. Results in flask-shaped ulcers

Regarding cholelithiasis

- 153. Pigment and cholesterol stones are types of gall stones
- 154. Obesity is a risk factor for pigment stones
- 155. It produces pre-hepatic jaundice
- 156. It increases the risk of carcinoma of gallbladder

Regarding viral hepatitis

- 157. Hepatitis B virus produces liver damage by direct cytopathic effect
- 158. Hepatitis C virus requires co-infection with Hepatitis B virus
- 159. Hepatitis B virus is an RNA virus

Characteristic features of systemic lupus erythematosus include

- 160. Erythematous butterfly rash on the face
- 201. Leukocytosis
- 202. Macrocytic anaemia
- 203. Tissue deposition of urate crystals

Ewing's tumour

- 204. Arises from primitive mesenchymal tissue
- 205. Has a peak incidence in the fifth decade
- 206. Does not metastasize
- 207. Is characterized by t (11;22)

Osteoporosis is

- 208. The result of an imbalance between bone formation and resorption
- 209. A complication of long standing steroid therapy
- 210. Common in adolescent females

Regarding Human Immunodeficiency Virus infection of the CNS

- 211. The virus is carried across the blood brain barrier in a neutrophil
- 212. Cerebral lymphoma is a complication
- 213. Serological analysis of the cerebrospinal fluid is diagnostic

Regarding infarction

- 214. Triangular infarcts are seen in the brain
- 215. It results due to trauma
- 216. Infarction of tissue with putrefaction is called gangrene
- 217. Water shed areas are not vulnerable to low-flow infarction

Systemic emboli

- 218. Arise in the arterial system
- 219. Are a major risk factor to pulmonary embolism in the post operative period
- 220. Can originate from the atrial thrombi in atrial fibrillation

Regarding aneurysms

- 221. They are sites for thrombus formation
- 222. Capillary micro-aneurysms can occur in diabetes and hypertension
- 223. Mycotic aneurysms are most commonly seen in intracerebral arteries

Hypertrophic cardiomyopathy

- 224. Is a complication of myocardial infarction
- 225. Shows marked hypertrophy of the interventricular septum
- 226. Can cause sudden cardiac death

Regarding infective endocarditis

- 227. In the elderly, it is most commonly due to calcific valve disease
- 228. It commonly involves the mitral valve in drug addicts
- 229. Aschoff bodies are seen in the endocardium
- 230. It can lead to septic infarcts in the spleen

Regarding asbestosis

- 231. It is characterized by lung fibrosis
- 232. Asbestos fibers get collected in the apex of the lung
- 233. Mallory hyaline bodies are pathognomonic

Regarding asthma

- 234. It causes irreversible airway obstruction
- 235. Mucous plugs are seen in the bronchi
- 236. Symptoms may sometimes persist for days

Regarding hyaline membrane disease

- 237. It is caused by deficiency of surfactant
- 238. Histologically shows fibrin and necrotic debris of epithelial cells
- 239. The outcome of disease depends on the gestational age
- 240. Corticosteroid administration to the infants helps in preventing it

The risk factors for breast carcinoma include

- 241. Atypical hyperplasia on microscopy
- 242. Young age at first full term pregnancy
- 243. Mutations in BRCA-1 gene
- 244. Early menarche

Graves' thyroiditis

- 245. Is associated with hypothyroidism
- 246. Grossly shows enlarged, beefy red thyroid
- 247. Is due to the production of long-acting thyroid stimulator (LATS) antibody

Type-1 diabetes mellitus is

- 248. Insulin dependent
- 249. Seen in obese adults
- 250. An autoimmune disorder

Regarding acute cellular rejection in renal transplant

- 251. It is the most common form of rejection
- 252. Thrombi form in the arteries of glomeruli
- 253. T-lymphocytes play a major role

Complications of acute pyelonephritis include

- 254. Pyonephrosis
- 255. Hydronephrosis
- 256. Renal papillary necrosis

Regarding renal cell carcinoma

- 257. It is rare before the age of 40 years
- 258. It is commonly seen in patients with acquired cystic kidney disease
- 259. It presents with hypocalcaemia
- 260. Clear cell (conventional) carcinoma has VHL gene abnormalities

