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Test Booklet Series

A

T. B. C. : AP – 11 – 17/18

TEST BOOKLET

ASSISTANT PROFESSOR IN O.M.E.S.

(PATHOLOGY)

Sl. No. 1589

Time Allowed : 3 Hours

Maximum Marks : 200

: INSTRUCTIONS TO CANDIDATES :

1. IMMEDIATELY AFTER THE COMMENCEMENT OF THE EXAMINATION, YOU SHOULD CHECK THAT THIS TEST BOOKLET DOES NOT HAVE ANY UNPRINTED OR TORN OR MISSING PAGES OR ITEMS ETC. IF SO, GET IT REPLACED BY A COMPLETE TEST BOOKLET OF THE SAME SERIES ISSUED TO YOU.
2. ENCODE CLEARLY THE TEST BOOKLET SERIES A, B, C OR D, AS THE CASE MAY BE, IN THE APPROPRIATE PLACE IN THE ANSWER SHEET USING BALL POINT PEN (BLUE OR BLACK).
3. You have to enter your **Roll No.** on the Test Booklet in the Box provided alongside. **DO NOT** write *anything else* on the Test Booklet.
4. **YOU ARE REQUIRED TO FILL UP & DARKEN ROLL NO., TEST BOOKLET / QUESTION BOOKLET SERIES IN THE ANSWER SHEET AS WELL AS FILL UP TEST BOOKLET / QUESTION BOOKLET SERIES AND SERIAL NO. AND ANSWER SHEET SERIAL NO. IN THE ATTENDANCE SHEET CAREFULLY. WRONGLY FILLED UP ANSWER SHEETS ARE LIABLE FOR REJECTION AT THE RISK OF THE CANDIDATE.**
5. This Test Booklet contains **200** items (questions). Each item (question) comprises four responses (answers). You have to select the correct response (answer) which you want to mark (darken) on the Answer Sheet. In case, you feel that there is more than one correct response (answer), you should mark (darken) the response (answer) which you consider the best. In any case, choose **ONLY ONE** response (answer) for each item (question).
6. You have to mark (darken) all your responses (answers) **ONLY** on the **separate Answer Sheet** provided by **using BALL POINT PEN (BLUE OR BLACK)**. See instructions in the Answer Sheet.
7. All items (questions) carry equal marks. All items (questions) are compulsory. Your total marks will depend only on the number of correct responses (answers) marked by you in the Answer Sheet. **There will be no negative markings for wrong answers.**
8. Before you proceed to mark (darken) in the Answer Sheet the responses to various items (questions) in the Test Booklet, you have to fill in some particulars in the Answer Sheet as per the instructions sent to you with your **Admission Certificate**.
9. After you have completed filling in all your responses (answers) on the Answer Sheet and after conclusion of the examination, you should hand over to the Invigilator the *Answer Sheet* issued to you. You are allowed to take with you the candidate's copy / second page of the Answer Sheet along with the **Test Booklet**, after completion of the examination, for your reference.
10. Sheets for rough work are appended in the Test Booklet at the end.

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SEAL

1. Which finding on electron microscopy indicates irreversible cell injury ?
   (A) Dilatation of endoplasmic reticulum
   (B) Dissociation of ribosomes from rough endoplasmic reticulum
   (C) Flocculent densities in the mitochondria
   (D) Myelin figures

2. Human genome comprises of how many protein encoding genes ?
   (A) 50,000
   (B) 20,000
   (C) 45,000
   (D) 1,00,000

3. According to FAB classification the minimum percentage of blasts required for the diagnosis of AML in bone marrow is :
   (A) 20%
   (B) 25%
   (C) 15%
   (D) 30%

4. All of the following statements concerning α thalassemia are correct except :
   (A) Hemoglobin Bart is seen in newborn with α-Thalassemia
   (B) Clinical syndrome is determined by number of α-genes deleted
   (C) HbH disease is caused by deletion of three α-globin genes
   (D) α-thalassemias is sex-linked

5. Mallory hyaline bodies are seen all except :
   (A) Indian childood cirrhosis
   (B) Wilson's disease
   (C) Alcoholic hepatitis
   (D) Crigler-Najjar Syndrome

6. Which of the following is the most abundant glycoprotein in the basement membrane ?
   (A) Laminin
   (B) Fibronectin
   (C) Proteoglycans
   (D) Heparan sulphate

7. Crooke's hyaline bodies are seen in :
   (A) Huntington's disease
   (B) Yellow fever
   (C) Basophil cells of the adenohypophysis in patients with hypercortisolism
   (D) Parkinsonism

8. Which histochemical stain is used to demonstrate melanin ?
   (A) Masson's trichrome stain
   (B) Gomori methamine silver stain
   (C) PAS stain
   (D) Masson Fontana stain

9. The structural abnormality in Berry aneurysm is :

(A) Degeneration of external elastic lamina

(B) Absence of smooth muscle and intimal elastic lamina

(C) Deposition of mucoid material in media

(D) Low grade inflammation of vessel wall

10. Lacunes in Hypertensive cerebrovascular disease are most commonly seen in :

(A) Lenticular nucleus

(B) Cerebellum

(C) Brain stem

(D) Cerebrum

11. Oligodendroglial inclusions are seen in :

(A) Japanese encephalitis

(B) Progressive multifocal leucon-cephalopathy

(C) Polio

(D) Rabies encephalitis

12. Which of the following morphologic features in prostate adenocarcinoma is associated with hormone refractory disease ?

(A) Atrophic glands

(B) Mucin secretion

(C) Focal neuroendocrine differen-tiation

(D) Perineural invasion

13. Which of the following is NOT a feature of HIV associated nephro-pathy ?

(A) Collapsing FSGS on renal biopsy findings

(B) Proteinuria

(C) It has a favorable prognosis

(D) Prominent hypertrophy and hyperplasia of podocytes

14. Modified Gomori Trichrome (MGT) stain is helpful in the diagnosis of the following muscle diseases except :

(A) Mitochondrial myopathy

(B) Tubular aggregate myopathy

(C) Nemalin rod myopathy

(D) Central core disease

15. CK positive fibrous bodies are seen in :

(A) GH secreting pituitary adenoma

(B) Prolactin secreting pituitary adenoma

(C) ACTH secreting pituitary ade-noma

(D) Null cell adenoma

16. Toxic shock syndrome is triggered by :

(A) Bacterial superantigens

(B) Lipopolysaccharides

(C) Fungal cell wall

(D) None of the above

17. Which of the following immuno-histochemical expression is not diagnostic of Sebaceous carcinoma ?

(A) Estrogen receptor

(B) Androgen receptor

(C) Adipophilin

(D) Perilipin 1

18. All of the followings about dysembryoplastic neuroepithelial tumor is true except :

(A) Most common found in mesial temporal lobe with a superficial location

(B) They are benign and of WHO grade I

(C) Most of the patients complain of headache and vomiting

(D) Foci of cortical dysplasia can be found in adjacent brain tissue

19. A 53-year-old woman has had chronic arthritis pain for the past 3 years. She has taken 2 gm of phenacetin a day for her pain over that time. She now has increasing fatigue. There are no abnormal findings on physical examination. Laboratory studies show her serum urea nitrogen is 52 mg/dL and creatinine 5.4 mg/dL. Which of the following pathologic findings is most likely present in her kidneys ?

(A) Papillary necrosis

(B) Focal segmental glomerulosclerosis

(C) Nephrocalcinosis

(D) Acute interstitial nephritis

20. Which of the following feature is not seen in dermatomyositis ?

(A) Membrane attack complex deposition on the endothelial blood vessels

(B) Invasion of non-necrotoic myofibres by CD 8 T cells

(C) Perifascicular atrophy

(D) Perivascular collection of plasma cells and CD 20+ lymphocytes

21. Which of the following infective organisms is not acid fast ?

(A) Histoplasma

(B) Cryptococcus

(C) Nocardia

(D) Cryptosporidium oocysts

22. Following are considered in classification of LEAT (long term epilepsy associated tumours except :

(A) Ganglioglioma

(B) Medulloblastoma

(C) Pleomorphic xanthoastrocytoma

(D) Angiocentric glioma

23. Development of colorectal cancer by chromosomal instability pathway involves point mutations in which of the following genes ?

(A) APC, RAS and TP53

(B) BCL-2 and APC

(C) ERBB2 and TP53

(D) APC, ABL and RB

24. Meningeal hemangiopericytomas are characterized by which recurrent genetic alteration ?

(A) NPM1-STAT6 fusion

(B) NAB3-STAT1 fusion

(C) NAB2-STAT6 fusion

(D) ALK-NPM1 fusion

25. Which of the following technique is best for detecting Kras gene mutation in a colon carcinoma in terms of sensitivity of detection ?

(A) Pyrosequencing

(B) Sanger sequencing

(C) qPCR with HRMA

(D) Cold PCR with sequencing

26. Which of the following brain tumours does not show INI 1 loss ?

(A) AT/RT (rhabdoid tumour)

(B) Cribriform neuroepithelial tumour (CRINET)

(C) Medulloepithelioma

(D) Childhood chordoma

27. Which of the following immunostains does not stain muclei ?

(A) B catenin

(B) Myogenin

(C) WNT

(D) Emerin

28. "Immediate transient response" leading to vascular leakage in acute inflammation is because of :

(A) Contraction of endothelial cells

(B) Vasoconstriction

(C) Endothelial cell necrosis and detachment

(D) Leucocyte adhesion to endothelium

29. Which of the following helps in differentiation of follicular carcinoma from follicular adenoma of thyroid gland ?

(A) Hurthle cell change

(B) Lyning of tall columnar and cuboidal cells

(C) Vascular invasion

(D) Increased mitoses

30. A patient with progressive transformation of germinal centres (PTGC) needs a close follow up as it can antedate a diagnosis of :

(A) Hodgkin's Lymphoma

(B) Chronic Lymphocytic Lymphoma

(C) Anaplastic Large Cell Lymhpoma

(D) Peripheral T cell Lymphoma

31. The predominant site for Acinic cell carcinomas of the salivary gland is :

(A) Submandibular Gland

(B) Minor Salivary Glands

(C) Sublingual Gland

(D) Parotid Gland

32. Which immunohistochemical stain is used for the diagnosis of Langerhans cell histiocytosis ?

(A) CD1a

(B) CD99 (mic-2)

(C) HMB-45

(D) CD117

33. A 36-year-old woman has been taking oral contraceptives for the past 10 years suddenly develops andominal pain. A pregnancy test is negative. Surgical exploration shows blood in the abdominal cavity. Which of the following is the most likely cause of the intra-abdominal haemorrhage ?

(A) Ruptured hepatic adenoma

(B) Ruptured abdominal aortic aneurysm

(C) Ruptured cavernous hemangioma of the liver

(D) Ruptured ectopic pregnancy

34. What would be the most probable diagnosis in a peripheral smear showing fragmented RBCs ?

(A) Aplastic anemia

(B) Disseminated Intravascular Coagulation (DIC)

(C) Hemolytic Uremic Syndrome (HUS)

(D) Thrombotic Thrombocytopenic Purpura (TTP)

35. Which of the following statements is false regarding Variant Creutzfeldt-Jakob disease ?

(A) Molecular featured are similar to CJD

(B) Occurs in older age

(C) Onset related to consumption of bovine spongiform encephalopathy agent

(D) Extensive cortical plaques surrounded by halo are seen

36. Which cell is the main source of perforins ?

(A) Plasma cells

(B) Cytotoxic T cells

(C) Suppressor T cells

(D) Memory helper T cells

37. A 24-years-old female has RBC count 4.8 million, MCV 62fl, TLC 7600/mm^3. There is no history of blood transfusion. She should be screened for :

(A) Iron deficiency anemia

(B) Thalassemia major

(C) Thalassemia minor

(D) Megaloblastic anemia

38. Which of the following is associated with "severe combined immunodeficiency disease" (SCID) ?
(A) Adenosine deaminase deficiency
(B) Acquired C1 esterase inhibitor deficiency
(C) Decreased circulating neutrophils
(D) NADPH oxidase deficiency

39. All are true about methylation of CpG island in MGMT gene in case of gliomas except :
(A) Prevents gene transcription
(B) Poor patient survival
(C) Increases tumor chemosensitivity
(D) Can be detected by pyrosequencing

40. Which of the following infective organism is not acid fast ?
(A) Histoplasma
(B) Cryptococcus
(C) Nocardia
(D) Cryptosporidium oocysts in stool examination

41. What is a Cellient cell block system ?
(A) Semiautomated method of cell block preparation
(B) Liquid based cytology method
(C) An automated cell block preparation system
(D) Modified agar method of cell block

42. Which gene is mutated in Osteogenesis imperfect ?
(A) COL1A2
(B) COL2A1
(C) COL9A2
(D) COL10A1

43. Most common cause of nephrotic syndrome is children is due to :
(A) Minimal change disease
(B) FSGS
(C) Membranous glomerulopathy
(D) MPGN

44. Which of the following muscle is an Xp21 muscle dystropy ?
(A) Limb girdle muscular dystrophy
(B) Fascioscapulohumoral muscular dystrophy
(C) Duschene Muscular dystrophy
(D) Congenital muscular dystropy

45. A clinical study is performed with subjects born with congenital urinary tract anomalies to assess the development of long term complications. One group of subjects is found to have an increased risk for the development of urothelial carcinoma. Which of the following congenital anomalies is most likely to carry this risk ?
(A) Unilateral renal agenesis
(B) Bladder exstrophy
(C) Bilateral ureteral duplication
(D) Horse-shoe Kidney

46. Micro-RNA (miRNA) :
(A) Encodes protein synthesis
(B) Inhibits function of mRNA
(C) Is associated with posttranscriptional silencing of gene expression
(D) Is not a conserved mechanism of gene regulation

47. Which of the following type is a non-fibrillar collagen ?
(A) Type II
(B) Type III
(C) Type IV
(D) Type V

48. The transcription factor hypoxia-inducible factor 1 (HIF1) :
(A) Inhibits new blood vessel formation
(B) Enhances anaerobic glycolysis
(C) Antagonize cell survival pathways
(D) Increases peroxinitrite formation

49. Which of the following mediators act to resolve inflammation ?
(A) Prostaglandin
(B) Prostacyclin
(C) Lipoxin
(D) Leukotriene

50. An example of trinucleotide-repeat mutation associated with genetic disorder is :
(A) Cystic fibrosis
(B) Fragile X syndrome
(C) Wilson disease
(D) Phenylketonuria

51. Which is the most common gene silenced by hypermethylation in prostate cancer ?
(A) Glutathione S-transferase (GSTP1)
(B) PTEN
(C) RB
(D) p16/INK4a

52. Which of the following genetic alteration is seen in superficial papillary tumours of Bladder ?
(A) 17p deletion
(B) 13q deletion
(C) 11p deletion
(D) 9p deletion

53. BRAF V600E mutation is most frequent in :
(A) Pleomorphic xanthoastrocytoma
(B) Diffuse astrocytoma
(C) Pilocytic astrocytoma
(D) Dysembryoplastic neuroepithelial tumor

54. Which of the following immunohistochemical marker is positive in acquired cyctic disease-associated Renal cell carcinoma ?
(A) CK7
(B) CK19
(C) AMACR
(D) ALK

55. Which of the following translocation is seen in Alveolar Rhabdomyosarcoma ?

(A) t(2 ; 13) (q35 ; q14)

(B) t(3 ; 13) (q35 ; q14)

(C) t(2 ; 13) (q35 ; q16)

(D) t(1 ; 13) (q35 ; q14)

56. Regarding Fibrous Hamartoma of Infancy which of the following statement is false ?

(A) Seen in children

(B) Well circumscribed

(C) Benign

(D) Three distinct components on histomorphology

57. Karyotyping is done for :

(A) Chromosomal disorder

(B) Autosomal recessive disorders

(C) Autosomal dominant disorders

(D) Linkage disorders

58. Which of the following is not benign ?

(A) Nodular Fascitis

(B) Proliferative myositis

(C) Ischemic fascitis

(D) Desmoid fibromatosis

59. Which is the most common location of soft tissue Leiomyosarcoma ?

(A) Retroperitoneum

(B) Blood Vessels

(C) Lower Extremity

(D) Intramuscular

60. Which of the following antibodies is not used for the diagnosis of prostatic adenocarcinoma by immunohistochemistry ?

(A) AMACR

(B) P63

(C) Cytokeratin 34beta E12

(D) Thrombomodulin

61. Bowenoid Papulosis is caused by which HPV subtype ?

(A) HPV 6

(B) HPV 11

(C) HPV 16

(D) HPV 14

62. OCT4 positivity is seen in :

(A) Seminoma

(B) Spermatocytic Seminoma

(C) Yolk Sac Tumor

(D) Sertoli Leydig Cell Tumor

63. Which of the following is not a germ cell tumour marker ?

(A) LIN28

(B) SALL4

(C) PLAP

(D) Brachyury

64. Membranous nephropathy is due to autoimmune response directed against which atuoantigen ?

(A) Nephrin

(B) Podocin

(C) Megalin

(D) PLA2 receptor

65. A 63-year-old woman has malaise and nausea for the past 14 months. On physical examination her stool is negative for occult blood. An upper GI endoscopy reveals loss of gastric rugal folds. Microscopic examination of a gastric biopsy reveals marked mucosal atrophy. Her Hb is 7.9 g/dL. Which of the following laboratory findings is most likely to be present in this woman ?

(A) Decreased serum ferritin

(B) Heinz bodies in RBC's

(C) Increased neutrophil segmentation

(D) Decreased red cell MCV

66. Which of the following is associated with better prognosis in Acute Lymphoblastic Leukemia ?

(A) Age under 1 year

(B) Presentation in adulthood

(C) Presence of Philadelphia chromosome

(D) Presence of t(12:21)

67. Wilm's tumor occurring in Denys Drash Syndrome is accompanied by which of these abnormalities ?

(A) Diffuse mesangial sclerosis

(B) Aniridia

(C) Hemihypertrophy

(D) Anorectal malformation

68. Which of the molecular subgroups of medulloblastoma has the best prognosis ?

(A) Wnt

(B) SHH

(C) Group C

(D) Group D

69. All of the following are the features of aplastic anaemia EXCEPT :

(A) Can follow after viral infections

(B) Inherited defects in telomerase are seen in 5 to 10% cases

(C) Bone marrow transplant is the treatment of choice

(D) Massive splenomealy

70. All of the following are true regarding platelet disorders EXCEPT :

(A) Bernard Soulier syndrome is due to deficiency of Glycoprotein complex Ib-IX

(B) Acute form of immune thrombocytopenic purpura is resistant to treatment

(C) Glanzmann thrombosthenia is due to the deficiency of Glycoprotein IIb/IIIa

(D) Chronic form of immune thrombocytopenic purpura is associated with collagen vascular disease

71. Which of the following statements is true for dense deposit disease ?

(A) Dense homogenous deposits in mesangium

(B) Caused due to excessive activation of classical compliment pathway

(C) Immunofluorescence shows linear deposition of IgG, C1q and C4 in the Glomerular basement membrane

(D) High incidence of recurrence in transplant recipient

72. Cell membrane-restricted ALK expression on immunohistochemistry is due to which of the following translocation ?

(A) t(2 : 5)(p23 : q35)

(B) t(2 : 17)(p23 : q25)

(C) t(2 : X)(p23 : q11)

(D) t(1 : 2)(p23 : q25)

73. The features helpful in differentiating Nodular Lymphocyte Predominant Hodgkin Lymphoma (NLPHL) from T Cell Rich B Cell Lymphoma (TCRBCL) :

(A) CD4+/CD57+ positive T cell

(B) NLPHL shows numeruous reactive T cell in the back ground

(C) TIA1 + cells in NLPHL

(D) CD8 + T cells predominant in NLPHL

74. Which of the following marker is not positive in classical Hodgkin Lymphoma ?

(A) CD20

(B) PAX5

(C) LCA

(D) LMP1

75. Which of the following statement is not true regarding cutaneous Anaplastic large cell lymphoma ?

(A) The tumor cells are negative for ALK1

(B) The disease has very benign clinal course

(C) The tumor cells show diffuse immunopositivity for CD30

(D) C-ALCL carry translocation involving ALK gene at chromosome 2

76. Which of the following statement is not true regarding Primary mediastinal large B cell lymphoma ?

(A) Usually present with superior vena cava syndrome

(B) Bone marrow involved at initial presentation

(C) The tumor cells are immuni-positive for CD30

(D) Responded well to chemo-therapy

77. Which of the following marker not positive in Mantle cell lymphoma ?

(A) CD10

(B) CD43

(C) Bc12

(D) CD5

78. Non Germinal centre type Diffuse large B cell lymphomas are immunopositive for all except ?

(A) BC16

(B) CD10

(C) MUM1

(D) CD79a

79. Which of the following statement is not true regarding Plasmablastic lymphoma ?

(A) Strongly associated with HIV infection

(B) Oral cavity is the most common location

(C) In situ hybridization for Epstein-Barr Virus (EBV)-encoded RNA is positive in the majority of cases

(D) CD20 is positive in majority of cases

80. Which of the following is not the molecular subtype of breast carcinoma according to gene expression profile ?

(A) Luminal A

(B) Besal like

(C) Abnormal like

(D) Normal like

81. Which of the following is a Immunohistochemical marker for GIST ?

(A) CD117

(B) SMA

(C) CD34

(D) CD99

82. Most common site for extra nodal lymphoma in gastrointestinal tract is :

(A) Liver

(B) Stomach

(C) Small intestine

(D) Large intestine

83. Which of the following statement is NOT CORRECT regarding colorectal carcinomas ?

(A) A small subset of tumours show CPG island hyperethylated phenotype

(B) 70-80% of sporadic colorectal carcinomas show MSI

(C) Adenocarcinomas are distributed equally over entire length of colon

(D) Both copies of APC gene must be inactivated for adenomas to develop

84. Bowen disease of the penis has a strong association with :

(A) Cowden disease

(B) HPV

(C) Inherited mutations in the K-RAS gene

(D) Turcot syndrome

85. Which of the following colonic polyps is not pre-malignant ?

(A) Juvenile polyp

(B) Hamartomatous polyps associated with Peutz-Jegher's syndrome

(C) Villous adenomas

(D) Tubular adenomas

86. A family of receptors containing a conserved structure of seven transmembrane alpha helices is :

(A) Cytokine receptor

(B) Receptor for epidermal growth factor

(C) G-protein coupled receptors

(D) Receptors for fibroblast growth factor

87. ATRX mutation is seen in :

(A) Pilocytic astrocytoma

(B) Primary glioblastoma

(C) Medulloblastoma

(D) Diffuse astrocytoma

88. Bacterial wall lipopolysaccharides bond with leucocytes through :

(A) CD14

(B) CD8

(C) CD4

(D) CD20

89. Which of the following colorectal carcinoma biomarkers has the highest sensitivity ?

(A) Fecal anti-globin assay

(B) Stool DNA detection of Kras and APC mutant gene

(C) Plasma Septin 9 detection

(D) Detection of COX2 and MMP7 from stool RNA

90. The following classification system is used for classifying the different grades of dysplasia in colon ?

(A) Sydney classification

(B) London classification

(C) Vienna classification

(D) Banff classification

91. Which of the following feature is one of the diagnostic feature of hepatic adenoma ?

(A) Presence of incomplete portal tracts

(B) Diffuse staining with glutamate synthetase

(C) Cytoplasmic β catenin stain

(D) Presence of small rounded hepatocytes

92. Which of the following is not a feature of Primary Sezary Syndrome ?

(A) Occurs without history of Mycosis fungoides

(B) Majority of cases are immuno-negative for CD7

(C) Shorter prodromal phase

(D) Most cases do not show epider-motropism

93. Hypersensitivity pneumonitis is classically a/an :

(A) Allergic reaction

(B) Type II hypersensitivity

(C) Immune complex mediated hypersensitivity

(D) Cell mediated hypersensitivity

94. Which is not seen in MEN I ?

(A) Parathyroid adenoma

(B) Pancreatic cancer

(C) Prolactinoma

(D) Medullary carcinoma thyroid

95. Clear cell sarcoma shows which cytogenetic aberration ?

(A) t(12 ; 22) (q13 ; q12)

(B) t(12 ; 15) (p13 ; q25)

(C) t(2 ; 13) (q35 ; q14)

(D) Trisomy 8 or 20

96. All of the following are true for clear cell meningioma except :

(A) Glycogen-rich cytoplasm

(B) Blocky collagen deposition

(C) Rare whorls

(D) Large, pleomorphic nuclei

97. TFEB positivity is seen in which type of RCC ?

(A) Tubulocystic carcinoma

(B) Translocation Xp11.2 RCC

(C) Translocation 6 ; 11 RCC

(D) ALK RCC

98. Which of the following statement about basal like subtype of breast carcinoma is correct ?

The tumor cells are :

(A) Majority of cases are ER positive

(B) Majority are immunopositive for CK5/6

(C) Have very good prognosis

(D) Have no association with BRCA 1 mutation

99. Which of the following auto-antibodies is associated with congenital heart block in the newborn of patients with SLE ?

(A) ds-DNA

(B) Sm antigen

(C) SS-A/SS-B

(D) Anti-Phospholipid

100. Which of the following malignancies is most common following exposure to ionizing radiation ?

(A) Melanoma

(B) Basal cell carcinoma

(C) Colonic adenocarcinoma

(D) Myeloid leukemia

101. Diaphragm disease of the colon is a complication of prolonged use of :

(A) Laxatives

(B) Steroids

(C) Non steroidal anti-inflammatory drugs

(D) Oral contraceptive pills

102. Which of the following is false regarding gastrointestinal stromal tumors ?

(A) *C-kit and PDGRFA* mutation should be assessed

(B) Germ line mutation of *SDH* gene are seen in WT-GISTs

(C) Peak age of clinical presentation is 30 years

(D) Loss of chromosome 14 and 22 is associated with progression

103. Which of the following is not a feature of chronicity in colonic inflammation ?

(A) Architectural distortion

(B) Paneth cell metaplasia

(C) Crypt-hyperplasia

(D) Pseudopyloric metaplasia

104. Which of the following feature is not one of the diagnostic features of autoimmune hepatitis ?

(A) Severe parenchymal destruction

(B) Interphase hepatitis

(C) Mallory hyaline bodies

(D) Lymphocytic bile duct injury

105. Which of the following statement regarding "cancer stem cell" is incorrect ?

(A) Is regulated by different mechanisms, than that regulate the normal stem cells

(B) Originate from a normal pluripotent stem cell

(C) Can resist effect of radiotherapy

(D) Have properties of self-renewal and growth

106. In the staging of Lung cancer, tumour invading superficially into the pleural connective tissue beneath the elastic layer indicates which of the following category ?

(A) PL 0

(B) PL 1

(C) PL 2

(D) PL 3

107. Histological identification of capillary proliferation, chronic inflammatory cells and hemosiderin laden macrophages in the myocardial infarction site indicates :

(A) 4 – 12 hours duration

(B) 24 – 72 hours duration

(C) 8 – 12 days duration

(D) 4 – 6 weeks duration

108. Epidermolysis bullosa acquisita is an acquired, mechanobullous disease characterized by autoimmunity to :

(A) Type I collagen

(B) Type II collagen

(C) Type VII collagen

(D) Type IV collagen

109. Cytokerain 20 immunopositivity is specific for which cells in the epidermis ?

(A) Superficial Keratinocytes

(B) Basal Keratinocytes

(C) Langerhan cells

(D) Merkle cells

110. Following are TRUE about papillary Fibroelastoma of the heart EXCEPT :

(A) Generally incidental

(B) Commonly seen in atrial surface of semilunar valves

(C) Consists of core of myoid connective tissue covered by endothelium

(D) It is a benign neoplasm

111. Which of the following immunohisto-chemical marker is helpful in identifying the biological activity of the pulmonary carcinoid tumors ?

(A) GLUT – 1

(B) TTF – 1

(C) Chromogranin

(D) CD 56

112. Which type of endocarditis has vegetation on both sides of the valves ?

(A) Infective endocarditis

(B) Libman-Sacks endocarditis

(C) Rheumatic fever

(D) Non-bacterial thrombotic endocarditis

113. Which of the following organ is seldom affected in pure Hypovolemic shock ?

(A) Kidney

(B) Adrenal

(C) Lungs

(D) Gastrointestinal tract

114. Pathogenesis of Hypersensitivity pneumonitis is :

(A) Allergic reaction

(B) Type II hypersensitivity

(C) Immune complex mediated hypersensitivity

(D) Cell mediated hypersensitivity

115. Which of the following gap junctions are predominantly identified in the conduction system of the heart ?

(A) Connexin 40

(B) Connexin 45

(C) Connexin 43

(D) Connexin 30

116. In cardiac Biopsy identification of C-KIT antigen positive cells means :

(A) Stem cell

(B) Myofibroblasts

(C) Normal myocyte

(D) Inflammatory cells

117. Gain of function mutations are seen in the following genes in primary adenocarcinoma lung except :

(A) EGFR

(B) ALK

(C) ROS

(D) CDKN2A

118. On direct immunofluorescence, deposition of IgA at deposition of immunoglobulin A (IgA) in a granular pattern in the upper papillary dermis favours the diagnosis of :

(A) Bulious pemphigoid

(B) Dermatitis herpetiformis

(C) Systemic lupus erythematosus

(D) Linear IgA Pemphigus

119. Most commonly involved mutation in familial hypertrophic cardiomyopathy is identified in :

(A) Beta Myosin heavy chain

(B) Cardiac Myosin binding protein C

(C) Cardiac Troponin T

(D) Cardiac Troponin I

120. Digital polymerase chain reaction (dPCR) is a refinement of conventional polymerase chain reaction method (PCR). All are true about dPCR except :

(A) Does not require a calibration curve

(B) Absolute quantification of nucleic acids possible

(C) Useful for rare allele detection

(D) Records the relative fluorescence of the DNA at specific points during the amplification process

121. The term exome sequencing refers to :

(A) Sequencing the entire genomic DNA

(B) Massive scale mRNA sequencing

(C) Sequencing all the protein coding genes in a genome

(D) Polysaccharide sequencing

122. Which is an incorrect statement about necroptosis, a form of cell death :

(A) Resembles necrosis and characterized by loss of ATP, swelling of the cell and organelles, generation of ROS and release of lysosomal enzymes

(B) Triggered by genetically programmed signal transduction events

(C) Has a role in neurodegenerative disease

(D) Caspases are activated

123. All of the following viruses produce intra-nuclear inclusions EXCEPT :

(A) Variola

(B) Measles virus

(C) HSV-I

(D) Cytomegalovirus

124. All of the following are seen in acute typhoid fever EXCEPT :

(A) Bacteremia during the first week of illness

(B) Prominence of reticuloendothelial cells throughout the body

(C) Enlarged and proliferated Peyer's patches

(D) Transversely oriented ulcerations in the terminal ileum with stricture formation

125. 'Flaking enamel paint' appearance of skin is seen in :

(A) Pellagra

(B) Kwashiorkor

(C) Marasmus

(D) Hypervitaminosis A

126. "Molecular chaperone therapy" may be useful in :

(A) Gaucher disease

(B) Tay Sachs disease

(C) Familial hypercholesterolemia with type II mutations

(D) Sickle cell anemia

127. Which of the following statements is true regarding Marfans syndrome ?

(A) All clinical manifestations are attributable to changes in tissue elasticity

(B) Congenital contractural arachnodactyly is caused due to mutation in *fibrillin-I*

(C) The most common cause of death is heart failure due to mitral regurgitation

(D) Revised Ghent criteria is used in clinical diagnosis

128. Antimitochondrial antibodies are seen in which of the following conditions ?

(A) Primary sclerosing cholangitis

(B) Chronic hepatitis C

(C) Primary biliary cirrhosis

(D) Alcoholic liver disease

129. Which of the muscle disease does not show rimmed vacuoles in the myofibres ?

(A) Inclusion body myositis

(B) Desminopathy

(C) Central core disease

(D) Oculopharyngeal muscular dystrophy

130. All of the following are part of College of American Pathologies (CAP) guidelines regarding assessment of HER-2/neu status in breast cancer EXCEPT :

(A) Sample ischaemia time should be less than 1 hour

(B) Biopsy should be fixed in formalin for at least 2 hours before HER-2/neu testing

(C) Strong membranous positivity in greater than 10% tumour cells is interpreted as HER-2/neu 3+ positive

(D) All breast cancer recurrences and metastases should be tested for HER-2/neu

131. Papanicolaou stain does not contain :

(A) Harris Hematoxylin

(B) Orange G

(C) Eosin B

(D) Light green SF

132. All of the following statements are true regarding cutaneous Anaplastic large cell lymphoma EXCEPT :

(A) The tumour cells are negative for ALK1

(B) The disease has an indolent behaviour

(C) The tumor cells show diffusion immunopositivity for CD30

(D) Carries translocation involving ALK gene at chromosome 2

133. Which of the following is not true for autoimmune pancreatitis ?

(A) Imaging shows a characteristic sausage shaped enlargement with homogenous attenuation, moderate enhancement and peripheral halo

(B) Dense lymphoplasmacytic infiltrate with perivenulitis are seen

(C) Predominantly ductal or lobular patterns are reported

(D) There is extensive dilatation of pancreatic duct

134. Cutaneous Squamous cell carcinoma is related to all EXCEPT :

(A) Exposure to UV light

(B) Chronic immunosuppression

(C) HPV infection

(D) Activating mutations in hedgehog pathway signalling

135. Regarding Fibrous Hamartoma of Infancy which of the following statements is false ?

(A) Seen in children

(B) Well circumscribed

(C) Not aggressive

(D) Three distinct components are seen on histomorphology

136. Clear cell sarcoma of soft tissue shows which cytogenetic aberration ?

(A) t(12 ; 22) (q13 ; q12)

(B) t(12 ; 15) (p13 ; q25)

(C) t(2 ; 13) (q35 ; q14)

(D) Trisomy 8 or 20

137. Which of the following is not benign ?

(A) Nodular Fascitis

(B) Proliferative myositis

(C) Ischemic fascitis

(D) Desmoid fibromatosis

138. Which is the most common location of soft tissue Leiomyosarcoma ?

(A) Retroperitoneum

(B) Blood Vessels

(C) Lower Extremity

(D) Intramuscular

139. Bowenoid Papulosis is caused by which HPV subtype ?

(A) HPV 6

(B) HPV 11

(C) HPV 16

(D) HPV 14

140. OCT4 immunopositivity is seen in :

(A) Seminoma

(B) Choriocarcinoma

(C) Yolk Sac Tumor

(D) Sertoli Leydig Cell Tumor

141. All are true about "HOT TUB LUNG" disease except :

(A) Abscess formation in alveolar interstitium

(B) Diffuse lung infiltrates on chest radiography

(C) Exposure to hot tub prior to the onset of illness

(D) Caused by exposure to *Mycobacterium avium* complex organisms

142. Which of the following is cell adhesion molecule ?

(A) Bone sialoprotein

(B) PDGF

(C) Fibronectin

(D) RANKL

143. Basic multicellular unit of bone is comprised by :

(A) Collections of osteocytes

(B) Collections of osteoblasts

(C) Collections of osteocytes, osteoblasts and osteoclasts

(D) Collections of osteoclasts

144. Which of the following antibodies is the most specific for rheumatoid arthrtis ?

(A) Anti IgM antibody

(B) Anti CCP antibody

(C) Anti IgA antibody

(D) Anti IgG antibody

145. Which translocation is diagnositic for synovial sarcoma ?

(A) T (X : 18)

(B) T (17, 9)

(C) T (9, 22)

(D) T (11, 14)

146. Which of the followings is not a correct statement about fibrous cortical defects ?

(A) Sharpely demarcated radio-lucencies on radiology

(B) Arise in metaphysis of distal femur and proximal tibia

(C) Undergo spontaneous resolution

(D) Mostly seen in middle aged patient

147. Which of the following statements best describe "Warburg effect" in tumours ?

(A) Host immunity against tumour

(B) Aerobic glycolysis of the tumour cells

(C) Epithelial mesenchymal transition (EMT)

(D) VEGF production by the tumour cells for angiogenesis

148. All are true regarding papillary carcinoma, thyroid EXCEPT :

(A) RET / PTC rearrangements

(B) Better prognosis in patients above 40 years

(C) Tall cell variant is associated with a higher frequency of vascular invasion

(D) Gain of function mutation of BRAF gene

149. All are included in the spectrum of IgG4-related disease EXCEPT :

(A) Retroperitoneal fibrosis

(B) Sclerosing sialadenitis

(C) Lymphocytic thyroiditis

(D) Type 1 autoimmune pancreatitis

150. The combination of compounds used to prepare Scott's tap water is :

(A) Magnesium sulphate with sodium bicarbonate

(B) Magnesium dioxide with sodium hydroxide

(C) Magnesium sulfide with sodium hydroxide

(D) Aluminium sulfate with sodium bicarbonate

151. Most common cause of malignancy documented in "Endobronchial metastasis (EBM)" is :

(A) Colorectal

(B) Prostate

(C) Breast

(D) Cervico vaginal

152. All are TRUE regarding "Pulmonary Alveolar Proteinosis (PAP)" EXCEPT :

(A) 90% of the patients have increased GM-CSF antibody

(B) Whole lung lavage treatment is required for both therapeutic and diagnostic purpose

(C) Ground glass opacities on CT scan

(D) Alveolar fluid accumulated is PAS positive and diastase sensitive

153. Which of the followings is responsible for mineralization ?

(A) Bone sialoprotein

(B) Osteocalcin

(C) Osteopontin

(D) Osteonectin

154. Which of the following genetic alteration is not associated with osteosarcoma ?

(A) Germline mutations in RB

(B) T P53 mutation

(C) INK 4a inactivation

(D) IDH1 mutation

155. Helicobacter pylori infection is associated with the following conditions, except :

(A) Peptic ulcer disease

(B) Gastric adenocarcinoma

(C) B cell lymphoma

(D) Burkitt's lymphoma

156. Which of the following statements is FALSE regarding gestational trophoblastic disease ?

(A) Partial mole are not considered to have an increased risk for choriocarcinoma

(B) Phenomenon of androgenesis is characteristically associated with complete mole

(C) Persistent or invasive mole is seen more frequently in partial moles

(D) Placental-site trophoblastic tumours represent neoplastic proliferation of extravillous trophoblasts

157. Which of the following statements is FALSE regarding TH17 cells ?

(A) TH17 cells are subset of CD4+T cells

(B) TH17 cells play an important role in maintaining mucosal barriers

(C) TH17 cells produce IL-6 and TGF-beta

(D) TH17 cells are induced by IL-23 and TGF-beta

158. Which of the following statements regarding MYC (a transcription factor) is FALSE ?

(A) MYC proto-oncogene belongs to the immediate early response genes

(B) MYC plays a role in the selection of origins of replication

(C) MYC can act in concert to reprogram somatic cells into pluripotent stem cells

(D) MYC protein help in excision repair of damaged DNA

159. Which of the following statements is FALSE about "three musketeers" of the p53 family ?

(A) p63 is essential for the differentiation of stratified squamous epithelia

(B) p73 has strong pro-apoptotic effects after DNA damage

(C) Concerted action of p53-p63-p73 is seen in basal subset of breast cancer

(D) 70% of colorectal carcinomas show homozygous loss of the p63 gene

160. Which of the following is NOT a lysosomal storage disorder ?

(A) von Gierke disease

(B) Wolman disease

(C) Krabbe disease

(D) Gaucher disease

161. All the following substances give a positive Benedict's test EXCEPT :

(A) Ascorbic acid

(B) Sucrose

(C) Fructose

(D) Galactose

162. Which immunoglobulins are characteristically present on naive (mantle) B cells that have not been exposed to antigen ?

(A) IgD and IgE

(B) IgD and IgA

(C) IgD and IgG

(D) IgM and IgD

163. Which one of the following is NOT a mechanism of antigenic variation in microbes ?

(A) High mutation rate

(B) Genetic rearrangement

(C) Epigenetic alterations

(D) Large diversity of serotypes

164. Which of the following tumour markers is detected in pancreatic cancer ?

(A) CA-19-9

(B) Alpha fetoportein

(C) CA-125

(D) Neuron specific enolase

165. Which of the following tissues is least radiosensitive ?

(A) Skin

(B) Hematopoietic bone marrow

(C) Gastrointestinal tract

(D) Bone

166. Principle of spectrophotometry is based on :

(A) Tyndall Effect

(B) Raman Scattering

(C) Beer-Lambert Law

(D) Rayleigh Scattering

167. siRNA is :

(A) Single stranded RNA

(B) Small interfering RNA

(C) Partially double stranded RNA

(D) Same as Sn RNA

168. An ideal buffer is compilation of :

(A) Strong acid with strong base

(B) Weak acid with weak base

(C) Strong acid with weak base

(D) Any combination of acid and base

169. A female patient presented with a firm mass of 2×2 cm in the upper outer quadrant of the breast. She gives a family history of ovarian carcinoma. The investigation that needs to be done to assess for mutations is :

(A) P53

(B) BRCA-2

(C) Her2/ Neu gene

(D) C-myc gene

170. Antibody found in antisynthetase syndrome is :
(A) Anti-Jo 1
(B) Anti sc1 70
(C) Anti Sm
(D) Anti Ku

171. Which of the following is not true for mesenchymal hamartoma of liver ?
(A) Majority occur in children under the age of 3 years
(B) Serum alpha-fetoprotein level is normal
(C) Balanced translocation involving chromosome 19q13.4 is reported
(D) Malignant transformation to embryonal sarcoma has been reported

172. Which of the following is true for fibrolamellar hepatocellular carcinoma ?
(A) Majority of the tumurs arise in cirrhotic livers
(B) Serum alpha-fetoprotein levels are markedly elevated
(C) Majority of cases occur below 35 years
(D) Prognosis is worse as compared to conventional hepatocellular carcinoma

173. Which of the following cytokines is important in the process of healing ?
(A) TNF-alpha
(B) IL-1
(C) TGF-beta
(D) IL-2

174. Which of the following is not true for choledochal cyst ?
(A) Type IV A involves intrahepatic and extrahepatic segments
(B) Type II is the most common type
(C) Most common cause of obstructive jaundice in children beyond infancy
(D) Strong female predilection

175. Which of the following complications is most likely to be observed in women receiving HRT ?
(A) Cervical carcinoma
(B) Endometrial carcinoma
(C) Hepatic adenoma
(D) Thromboembolism

176. Which of the following statement is not true in Burkitt's lymphoma ?
(A) Endemic tumours are associated with latent Epstein Barr Virus infection
(B) Starry sky appearance is seen in the lymph node
(C) MIB1 (Ki-67) labelling index is often very high
(D) Most of the patients have an indolent course

177. Which of the following malignancy is associated with human herpes virus 8 infection ?
(A) Burkitt's lymphoma
(B) Primary effusion lymphomas of body cavities
(C) Diffuse large cell lymphoma of elderly
(D) T-cell Leukemia/Lymphoma

178. Which of the following is usually not associated with neurofibromatosis type-1 (NF-1) ?

(A) Lisch nodule

(B) Plexiform nerofibroma

(C) Optic nerve gliomas

(D) Ependymomas of the spinal cord

179. Which of the following statement is not true for intravascular large cell lymphoma ?

(A) Known as intravascular lymphomatosis

(B) Highly aggressive lymphoma

(C) Mostly B lineage

(D) Immunopositive for CD13 and CD33

180. Which of the following fusion genes is most frequently seen in Ewing's sarcoma ?

(A) EWS – FLI1

(B) EWSR1 – AFT1

(C) EWSR1 – FEV

(D) EWS – CHOP

181. All of the following are second-site primary tumurs in bilateral retinoblastoma patient except :

(A) Lymphoma

(B) Melanoma

(C) Pinealoblastoma

(D) Osteosarcoma

182. Which of the following is NOT TRUE for Multiple osteochondromas ?

(A) Autosomal recessive inheritance

(B) Most of the patients are diagnosed below 5 years

(C) Malignant transformation is more common than in sporadic cases

(D) Located at or close to the metaphyses of the bones involved

183. McCune-Albright syndorme is diagnosed on the basis of the following except :

(A) Fibrous dysplasia

(B) Cafe-au-lait skin lesions

(C) Hypofunctioning endocrine disease

(D) Somatic mutation in the GNAS gene

184. Which of the following statements about Aneurysmal Bone Cyst (ABC) is incorrect ?

(A) Generally occurs during first two decades

(B) Mostly occurs in epiphysis of long bones

(C) The stabilization phase has soap bubble appearance

(D) Rearrangement of chromosome 17p13 are seen in spindle cells

185. Histologically Erdheim-Chester disease is usually characterised by all of the following except :

(A) Foamy histiocytes and Tuoton-type giant cells

(B) Xanthomatous lesion with osteoporotic bone

(C) Reactive fibrosis with lymphocytes, plasma cells and eosinophils

(D) Sclerotic bone

186. Which of the following is a marker for Langerhans cell histiocytosis ?

(A) CD 20

(B) CD 1a

(C) CD 5

(D) CD 30

187. Which of the following is the predominant component in bone ?

(A) Collagen

(B) Non-collagenous protein

(C) Mineral

(D) Lipid

188. Which cells are seen in Howship's lacunae ?

(A) Osteoblasts

(B) Osteocytes

(C) Osteoclasts

(D) Mesenchymal stem cells

189. Which of the following is the best method of assessment of fracture healing ?

(A) Examination with polarized light

(B) Examination after Masson trichrome stain

(C) Phase contrast microscopic examination

(D) Electron microscopic examination

190. Which of the followings is the normal arrangement of adult cartilage ?

(A) Lamina splendens, Tidemark, Zone 1 – 3, Calcified cartilage

(B) Lamina splendens, Zone 1 – 3, Tidemark, Calcified cartilage

(C) Tidemark, Zone 1 – 3, Lamina splendens, Calcified cartilage

(D) Tidemark, Lamina splendens, Zone 1 – 3, Calcified cartilage

191. All of the followings are complicated by ischemia and infections except :

(A) Osteopetrosis

(B) Gaucher's disease

(C) Sickle cell anemia

(D) Erdheim Chester disease

192. Pathologic features of Osteogenesis imperfecta include all except :

(A) Deficiency in collagen type IV

(B) Most cases show Autosomal dominant mutations

(C) Subtype II is associated with death in utero

(D) Extreme skeletal fragility

193. Most common organism for 80 to 90% cases of culture positive pyogenic osteomyelitis is :

(A) Staphylococcus aureus infection

(B) Klebsiella

(C) Streptococcus infection

(D) Pseudomonas

194. Systemic amyloidosis is seen in what percentage of individuals with multiple myeloma ?

(A) 80-95%

(B) 65-79%

(C) 40-64%

(D) 5-15%

195. The tumour suppressor gene p53 induces cell cycle arrest mainly at :

(A) G_2-M phase

(B) S-G_2 phase

(C) G_1-S phase

(D) G_0 phase

196. ABO blood group inheritance is an example of :

(A) Codominance

(B) Mitochondrial inheritance

(C) Allelic exclusion

(D) Sex-linked inheritance

197. Maternal disomy of chromose 15 is seen in :

(A) Prader-Willi syndrome

(B) Klinefelter's syndrome

(C) Down syndrome

(D) Turner's syndrome

198. Best parameter for the assessment of body iron stores is :

(A) Serum iron

(B) Serum TIBC

(C) Serum ferritin

(D) Serum transferin

199. Lead toxicity causes the following except :

(A) Peripheral demyelinating neuropathy

(B) Sideroblastic anemia

(C) Basophilic stippling

(D) Macrocytic anemia

200. The main function of Major Histocompatibility Complex 1 and 2 is :

(A) Transduce the signal of T cells following antigen recognition

(B) Mediate immunogenic class switching

(C) Display peptide fragments of antigens for recognition by T cells

(D) Enhance the secretion of cytokines

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