

DO NOT OPEN THIS TEST BOOKLET UNTIL YOU ARE ASKED TO DO SO

T.B.C. : B-BNT-M-HHQ-A

Test Booklet Series

Serial No.

TEST BOOKLET

Paper I

**GENERAL ABILITY,
GENERAL MEDICINE
AND PAEDIATRICS****A**

Time Allowed : Two Hours

Maximum Marks : 250

INSTRUCTIONS

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.
2. PLEASE NOTE THAT IT IS THE CANDIDATE'S RESPONSIBILITY TO ENCODE AND FILL IN THE ROLL NUMBER AND TEST BOOKLET SERIES CODE A, B, C OR D CAREFULLY AND WITHOUT ANY OMISSION OR DISCREPANCY AT THE APPROPRIATE PLACES IN THE *OMR* ANSWER SHEET. ANY OMISSION/DISCREPANCY WILL RENDER THE ANSWER SHEET LIABLE FOR REJECTION.
3. You have to enter your Roll Number on the Test Booklet in the Box provided alongside. *DO NOT* write *anything else* on the Test Booklet.
4. This Test Booklet contains **120** items (questions). Each item comprises four responses (answers). You will select the response which you want to mark on the Answer Sheet. In case you feel that there is more than one correct response, mark the response which you consider the best. In any case, choose *ONLY ONE* response for each item.
5. You have to mark all your responses *ONLY* on the separate Answer Sheet provided. See directions in the Answer Sheet.
6. All items carry equal marks.
7. Before you proceed to mark in the Answer Sheet the response to various items in the Test Booklet, you have to fill in some particulars in the Answer Sheet as per instructions sent to you with your Admission Certificate.
8. After you have completed filling in all your responses on the Answer Sheet and the examination has concluded, you should hand over to the Invigilator *only the Answer Sheet*. You are permitted to take away with you the Test Booklet.
9. Rough sheets are appended at the end of the Test Booklet.
10. **THERE WILL BE PENALTY FOR WRONG ANSWERS MARKED BY A CANDIDATE IN THE OBJECTIVE TYPE QUESTION PAPERS.**
 - (i) There are four alternatives for the answer to every question. For each question for which a wrong answer has been given by the candidate, **one-third** of the marks assigned to that question will be deducted as penalty.
 - (ii) If a candidate gives more than one answer, it will be treated as a **wrong answer** even if one of the given answers happens to be correct and there will be same penalty as above for that question.
 - (iii) If a question is left blank i.e. no answer is given by the candidate, there will be **no penalty** for that question.

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1. Endemic cardiomyopathy in children is linked to the deficiency of

- (a) zinc
- (b) cobalt
- (c) selenium
- (d) chromium

2. Beta-blocker therapy after acute myocardial infarction is contraindicated in which of the following conditions ?

- 1. Heart failure
- 2. Orthostatic hypotension
- 3. Peptic ulcer disease
- 4. Bronchial asthma

Select the correct answer using the code given below :

- (a) 1 and 2 only
- (b) 1, 2 and 4
- (c) 1 and 4 only
- (d) 2, 3 and 4

3. The following congenital heart diseases, are associated with cyanosis *except*

- (a) complete transposition of the great arteries
- (b) single ventricle with or without pulmonic stenosis

(c) hypoplastic left heart

(d) atrial septal defect with mitral stenosis

4. A 34-year old non-diabetic, normotensive patient presents with acute severe retrosternal pain. The ECG shows ST elevation (≥ 3 mm) in anterior chest leads. Blood for CPK-MB, Troponin-T and AST are normal. A repeat ECG after 24 hours is normal. What is the likely diagnosis ?

- (a) Acute pericarditis
- (b) Prinzmetal's angina
- (c) Acute anterior myocardial infarction
- (d) Acute non-myocardial infarction

5. Which one of the following is characteristic of Opening Snap (on cardiac auscultation) ?

- (a) Low pitched, early diastolic
- (b) High pitched, early diastolic
- (c) High pitched, late diastolic
- (d) Low pitched, late diastolic

6. Sudden onset of cough followed by increased dyspnea is typical of

- (a) Pneumothorax
- (b) Lobar pneumonia
- (c) Collapse of lung
- (d) Acute pleurisy

7. Multi-drug resistance tuberculosis implies resistance to at least
- any two antitubercular drugs
 - Isoniazid and Ethambutol
 - Rifampicin and Ethambutol
 - Isoniazid and Rifampicin
8. A patient of pulmonary tuberculosis is on antitubercular therapy. He develops drug-induced hepatitis. Which of the following drugs is *not* responsible?
- Rifampicin
 - Ethambutol
 - Pyrazinamide
 - Isoniazid
9. Which of the following is the best determinant of adequacy of alveolar ventilation?
- Arterial pO_2 level
 - Arterial pCO_2 level
 - Minute ventilation
 - Presence of cyanosis
10. Which of the following is a DNA virus?
- Hepatitis A virus
 - Hepatitis B virus
 - Hepatitis C virus
 - Hepatitis E virus
11. Drug of choice for the treatment of *Taenia solium* and *Taenia saginata* infestation is
- Metronidazole
 - Albendazole
 - Niclosamide
 - Diloxanide furoate
12. Very high serum transaminases (ALT/AST > 1000 IU/L) are seen in the following conditions *except*
- Viral hepatitis
 - Ischaemic liver injury
 - Toxin-induced liver injury
 - Alcoholic liver disease
13. Necrotizing papillitis is a feature in all of the following conditions *except*
- Sickle cell disease
 - Tuberculous pyelonephritis
 - Diabetes mellitus
 - Analgesic nephropathy

14. The characteristic abnormality found in the urinalysis of a case of acute glomerulonephritis is

1. Granular casts
2. Red cell casts
3. Hyaline casts
4. WBC casts

Select the correct answer using the code given below :

- (a) 1, 2 and 3
- (b) 1 and 4
- (c) 2 and 3 only
- (d) 2 only

15. Most common mutation in Alport's syndrome is in COL4A5 gene, which is transmitted as

- (a) autosomal dominant
- (b) autosomal recessive
- (c) X-linked
- (d) variable, autosomal dominant or autosomal recessive

16. Broad casts in urinary sediments is specific for

- (a) acute renal failure
- (b) rapidly progressive renal failure

- (c) chronic renal failure
- (d) asymptomatic urinary abnormality

17. Amaurosis fugax refers to transient ischaemic attack involving the region of

- (a) retina
- (b) internal capsule
- (c) brain stem
- (d) cerebral cortex

18. Sub-acute combined degeneration of spinal cord results from the deficiency of which of the following vitamins ?

- (a) B₆
- (b) B₁₂
- (c) B₁
- (d) B₃

19. The following systemic diseases are typically associated with polyneuropathy *except*

- (a) Diabetes mellitus
- (b) Hyperthyroidism
- (c) Uraemia
- (d) Carcinoma bladder

20. A young boy with history of left ear discharge develops fever, headache, vomiting and focal seizure of right upper limb. The appropriate line of management is

- (a) urgent CT head and antibiotics
- (b) urgent EEG and antibiotics
- (c) urgent Otoscopy and antibiotics
- (d) urgent CBC (complete blood counts) and antibiotics

21. Which of the following blood disorders is *not* associated with a large spleen ?

- (a) Beta thalassaemia
- (b) Chronic myeloid leukaemia
- (c) Hairy cell leukaemia
- (d) Sickle cell anaemia

22. Megaloblastic anaemia may be caused by the following drugs *except*

- (a) Phenytoin
- (b) Methotrexate
- (c) Pyrimethamine
- (d) Amoxicillin-Clavulanic acid (amoxyclav)

23. Disseminated intravascular coagulation (DIC) is characterized by the following *except*

- (a) widespread bleeding/thrombosis
- (b) prolongation of prothrombin time/partial thromboplastin time
- (c) high levels of fibrin degradation products
- (d) high platelet count

24. Match List I with List II and select the correct answer using the code given below the Lists :

List I (Disease)	List II (Appropriate Microbe)
A. Epidemic typhus	1. Coxiella burnetti
B. Murine typhus	2. R. rickettsii
C. Q fever	3. R. typhi
D. Rocky mountain spotted fever	4. R. prowazekii

Code :

	A	B	C	D
(a)	3	2	4	1
(b)	3	4	2	1
(c)	4	3	1	2
(d)	1	4	2	3

25. Which one of the following statements is *not* correct regarding the characteristics of HACEK organisms ?

- (a) Fastidious, fast-growing, gram-positive bacteria whose growth requires an atmosphere of L-cysteine
- (b) Known to cause severe systemic infections – most often bacterial endocarditis, which can develop on either native or prosthetic valves
- (c) Normally reside in the oral cavity and has been associated with local infections in the mouth
- (d) The cure rates for HACEK prosthetic-valve endocarditis appears to be high

26. A 50-year male quartz quarry worker presents with progressive dyspnoea on exertion. Which of the following is the likely pneumoconiosis ?

- (a) Asbestosis
- (b) Byssinosis
- (c) Silicosis
- (d) Berylliosis

27. Splenectomised patients have an increased susceptibility to which one of the following infections ?

- (a) *Entamoeba histolytica*
- (b) *Giardia lamblia*
- (c) *Streptococcus pneumoniae*
- (d) *Aspergillus niger*

28. Match List I with List II and select the correct answer using the code given below the Lists :

List I (Class of drugs)	List II (Anti retroviral agents)
A. Nucleoside analogue Reverse Transcriptase Inhibitor	1. Stavudin
B. Nucleotide analogue Reverse Transcriptase Inhibitor	2. Nevirapine
C. Non-Nucleotide Reverse Transcriptase Inhibitor	3. Lopanavir
D. Protease Inhibitor	4. Tenofovir

Code :

	A	B	C	D
(a)	1	3	2	4
(b)	1	4	2	3
(c)	2	3	1	4
(d)	2	4	1	3

29. Which one of the following is not characteristic of Vitamin-D resistant rickets ?

- (a) X-linked inheritance
- (b) Renal stones
- (c) Reduced calcium absorption from the gut
- (d) Hypophosphatemia

30. A 8-year old child presents with itching on the scalp with loss of hair. A characteristic 'black dot' appearance is seen. Which of the following is the most likely cause ?

- (a) Alopecia areata
- (b) Pediculosis capitis
- (c) Tinea capitis
- (d) Traumatic alopecia

31. Consider the following statements regarding leprosy :

1. Lepra reactions are not a feature of tuberculoid leprosy
2. Erythema nodosum leprosum often occurs following institution of chemotherapy
3. Elevated circulating level of tumour necrosis factor (TNF) is detected in patients with ENL
4. Lucio phenomenon occurs in untreated patients with tuberculoid leprosy

Which of the statements given above are correct ?

- (a) 1, 2 and 3
- (b) 2, 3 and 4
- (c) 1, 2 and 4
- (d) 1, 3 and 4

32. Match List I with List II and select the correct answer using the code given below the Lists :

List I (Organism)	List II (Vector)
A. <i>Borrelia burgdorferi</i>	1. <i>Aedes aegypti</i>
B. Dengue	2. <i>Culex mosquito</i>
C. Japanese encephalitis	3. <i>Pediculus hominis corporis</i>
D. <i>Rickettsia prowazekii</i>	4. <i>Ixodes tick</i>

Code :

	A	B	C	D
(a)	1	4	2	3
(b)	2	3	4	1
(c)	4	1	2	3
(d)	3	1	2	4

33. As regards schizophrenia, which one of the following statements is **not** correct ?

- (a) Occurs in 0.5-0.8 per cent of general population
- (b) Increasing parental age enhances the risk in the child
- (c) If both parents are affected, the risk in their offsprings is above 90 per cent
- (d) The illness may resemble severe and persistent neurosis

34. Consider the following statements regarding organo-phosphorus poisoning :

1. There is inhibition of cholinesterase function
2. In chronic exposure, there may be peripheral neuropathy
3. In acute poisoning, there may be muscular weakness
4. In intermediate syndrome, sensory functions may be affected

Which of the statements given above are correct ?

- (a) 1, 2 and 3
- (b) 2, 3 and 4
- (c) 1, 2 and 4
- (d) 1, 3 and 4

35. Which one of the following is a specific antidote for opiate overdose ?

- (a) Fomepizole
- (b) Flumazenil
- (c) Naloxone
- (d) Physostigmine

36. Which one of the following statements concerning catheter associated urinary tract infection is correct ?

- (a) Most catheter associated infections are symptomatic
- (b) Routine antimicrobial prophylaxis is indicated

(c) Microscopic bacteria correlates with significant colony count ($> 10^5$ /ml) in symptomatic cases

(d) Skin organisms such as staphylococcus and streptococcus are the most common aetiological organisms

37. Which one of the following is *not* a feature of Type-I renal tubular acidosis ?

- (a) Lower tubule re-absorption of calcium
- (b) Defective bicarbonate absorption in distal tubule
- (c) Low serum potassium level
- (d) Increased anion gap

38. Which one of the following is not a feature of Adult Polycystic Kidney Disease ?

- (a) Hypertension
- (b) Intermittent renal colic
- (c) Massive proteinuria
- (d) Macroscopic haematuria

39. Pin point pupil may be found in all of the following *except*

- (a) Organophosphorus poisoning
- (b) Morphine poisoning
- (c) Pontine haemorrhage
- (d) Paracetamol poisoning

40. Pulmonary complications of rheumatoid arthritis include the following *except*
- Pulmonary nodules
 - Mesothelioma
 - Fibrosing alveolitis
 - Pleural effusion
41. In a right-handed person, which of the following signs is *not* a characteristic feature of occlusion in the right middle cerebral artery?
- Left hemiplegia with left UMN VII cranial nerve palsy
 - Left hemiplegia with aphasia
 - Left hemiplegia with right anosognosia
 - Left hemiplegia with left hemi-anaesthesia
42. Metoclopramide suppresses which of the following neurotransmitters in vomiting?
- Dopamine
 - Serotonin 5-HT₄
 - Histamine
 - Acetylcholine
43. The amyloid protein in primary systemic amyloidosis belongs to which of the following classes of fibril proteins?
- AA protein
 - AL protein
 - A β protein precursor
 - β_2 microglobulin protein

44. Match List I with List II and select the correct answer using the code given below the Lists:

List I (Globin chains)	List II (Types of haemoglobin)
A. $\alpha_2 \beta_2$	1. Hb A ₂
B. $\alpha_2 \gamma_2$	2. Hb A
C. $\alpha_2 \delta_2$	3. Hb F
D. $\beta_2 \beta_2$	4. Hb H

Code :

	A	B	C	D
(a)	4	3	1	2
(b)	4	1	3	2
(c)	2	1	3	4
(d)	2	3	1	4

45. Which one of the following is *not* a common feature of cystic fibrosis?
- Exocrine pancreatic insufficiency
 - Azoospermia
 - Distal gastrointestinal obstruction
 - Polyneuropathy
46. A 60-year old male suffering from auditory hallucinations says that people staying upstairs were talking about him and conspiring against him. He filed a police complaint against them but the allegations were proved to be wrong. The most likely diagnosis is
- depression
 - dementia
 - delusional disorder
 - schizophrenia

47. Each of the following is true about the idiopathic primary pulmonary hypertension *except*

- (a) it is usually associated with coronary artery disease
- (b) it is more common in females
- (c) it is usually asymptomatic to begin with
- (d) it is characterized by autosomal dominant inheritance

48. Which one of the following is *not* correct about Wilson's disease ?

- (a) It is an autosomal recessive disorder
- (b) Serum ceruloplasmin is low
- (c) There is hepatolenticular degeneration
- (d) Serum copper concentration is high

49. Which one of the following is *not* an aetiology of transudative pleural effusion ?

- (a) Mesothelioma
- (b) Congestive heart failure
- (c) Cirrhosis
- (d) Nephrotic syndrome

50. With reference to secondary tumours of the lung, which one of the following is *not* correct ?

- (a) Diagnosis is made from radiological examination
- (b) Endobronchial deposits are common
- (c) These are usually multiple and bilateral
- (d) Quite often, there are no respiratory symptoms

51. A patient is being investigated for chronic diarrhoea. Small intestinal mucosal biopsy shows PAS positive foamy macrophages. The diagnosis is probably

- (a) chronic amoebiasis
- (b) chronic giardiasis
- (c) Whipple's disease
- (d) intestinal sarcoidosis

52. Consider the following modalities of treatment :

1. Ballon dilatation
2. Heller's operation
3. Local injection of botulinum toxin

Which of the above is/are the treatment modalities for achalasia cardia ?

- (a) 1 only
- (b) 1 and 2 only
- (c) 2 and 3 only
- (d) 1, 2 and 3

53. Consider susceptibility to the following pulmonary pathogens :

1. *M. tuberculosis*
2. *P. aeruginosa*
3. *S. aureus*
4. *Nocardia sp.*

Which of the above is/are associated with long term glucocorticoid therapy ?

- (a) 3 only
- (b) 1 and 4
- (c) 2 and 3
- (d) 2, 3 and 4

54. Match List I with List II and select the correct answer using the code given below the Lists :

List I (Clinical condition)	List II (Clinical manifestation)
A. Lepra reaction	1. Koebner's phenomenon
B. Herpes zoster	2. Erythema nodosum
C. Psoriasis	3. Nikolsky's sign
D. Pemphigus vulgaris	4. Chickenpox virus

Code :

	A	B	C	D
(a)	1	4	3	2
(b)	2	1	4	3
(c)	3	4	1	2
(d)	2	4	1	3

55. In moderate severity obstructive lung disease, the expected abnormalities include the following *except*

- (a) ↑ Residual capacity
- (b) ↓ Vital capacity
- (c) ↓ FRC/TLC ratio
- (d) $FEV_1/FVC < 70\%$

56. Rasmussen's aneurysm is a

- (a) dilated vessel in a tubercular lung cavity
- (b) dilation of the root of aorta in valvular stenosis
- (c) dilated aorta in syphilitic affection
- (d) dilated renal vessel in hypertensive renal disease

57. The following are important diagnostic skin manifestations of acute rheumatic fever :

1. Erythema marginatum
2. Subcutaneous nodules
3. Oster's nodes
4. Butterfly rash

Select the correct answer using the code given below :

- (a) 1, 2 and 4
- (b) 1 and 2 only
- (c) 2, 3 and 4
- (d) 1 and 3

58. Aortic regurgitation is characterized by

1. Wide pulse pressure
2. Angina pectoris
3. Early diastolic murmur
4. Loud 1st heart sound

Select the correct answer using the code given below :

- (a) 1, 2 and 3
- (b) 2, 3 and 4
- (c) 1, 2 and 4
- (d) 1, 3 and 4

59. Match List I with List II and select the correct answer using the code given below the Lists :

List I (Disease)	List II (Association)
A. Dermato-myositis	1. Heliotrope rash
B. Epidemic dropsy	2. Hyper-natraemia
C. Arsenic poisoning	3. Hyper-pigmentation
D. Diabetes insipidus	4. Dihydro-sanguirine

Code :

	A	B	C	D
(a)	1	4	3	2
(b)	1	3	4	2
(c)	2	4	3	1
(d)	2	3	4	1

60. Each of the following antibiotics can be given orally *except*

- (a) Azithromycin
- (b) Amikacin
- (c) Cefdinir
- (d) Linezolid

61. Consider the following statements regarding Austin Flint murmur :

1. It is heard in severe aortic regurgitation
2. It is produced at the anterior mitral leaflet by the regurgitant blood during diastole
3. It is an evidence of associated mitral stenosis
4. It is heard in aneurysmal dilatation of the ascending aorta

Which of the statements given above are correct ?

- (a) 1, 2 and 3
- (b) 2, 3 and 4
- (c) 1, 3 and 4
- (d) 1 and 2 only

62. Two or more oligoclonal bands in cerebrospinal fluid are most often positive in

- (a) acute bacterial meningitis
- (b) multiple sclerosis
- (c) subarachnoid haemorrhage
- (d) polyneuropathy

63. A 30-year old male presented with fever, dry cough and weight loss of 6 months duration. The chest X-ray shows miliary pattern. The differential diagnosis includes all the following *except*

- (a) tuberculosis
- (b) Wegener's granulomatosis
- (c) fungal infection
- (d) sarcoidosis

64. Consider the following statements regarding a healthy adult :

1. Mean left atrial pressure is 12-20 mm Hg
2. Left ventricular end diastolic volume is between 70-100 ml/m²
3. Pulmonary vascular resistance is 20-120 dynes sec cm⁻²
4. Left ventricular ejection fraction at rest is 0.55 to 0.80

Which of the statements given above are correct ?

- (a) 1, 2 and 3
- (b) 2, 3 and 4
- (c) 1, 3 and 4
- (d) 1, 2 and 4

65. In acute hypoxaemic respiratory failure, which of the following statements is correct regarding arterial blood gas analysis ?

- (a) PaO₂ is decreased and PaCO₂ is either normal or low
- (b) PaO₂ is decreased and PaCO₂ is high

- (c) Both PaO₂ and PaCO₂ levels are markedly reduced
- (d) PaO₂ is normal and PaCO₂ is high

66. Match List I with List II and select the correct answer using the code given below the Lists :

List I (Clinical condition)	List II (Association)
A. Hypo-thyroidism	1. Prolonged P-R interval
B. Rheumatic cordites	2. Pin point pupils
C. Subarachnoid haemorrhage	3. Subhyaloid haemorrhage
D. Morphine poisoning	4. Hung-up reflex

Code :

	A	B	C	D
(a)	4	3	1	2
(b)	2	4	3	1
(c)	1	2	3	4
(d)	4	1	3	2

67. Each of the following is a sign of impaired ventricular function *except*

- (a) raised JVP
- (b) narrow pulse pressure
- (c) end-inspiratory lung crepitations
- (d) tapping apical impulse

68. Consider the following statements regarding coarctation of aorta :

1. It may be associated with Turner syndrome
2. It most commonly occurs near the insertion of the ligamentum arteriosum
3. It is twice as common in females than males
4. It may be associated with bicuspid aortic valve

Which of the statements given above are correct ?

- (a) 1, 2 and 3
- (b) 2, 3 and 4
- (c) 1, 3 and 4
- (d) 1, 2 and 4

69. Which one of the following ECG findings is most likely to be seen at the time of cardiac arrest ?

- (a) Ventricular fibrillation
- (b) Ventricular tachycardia
- (c) Atrial fibrillation
- (d) Paroxysmal atrial tachycardia

70. The most reliable indicator of recent Hepatitis-B infection in a convalescing patient is

- (a) IgM Anti HBc
- (b) IgM Anti HBe

(c) HBs Ag

(d) IgG Anti HBs

71. A 2-year old child presents with generalized muscle hypotonia and weakness. Distal muscles are affected more than the proximal muscle groups. Facial muscles are spared. Deep tendon reflexes are diminished. Electromyography reveals fibrillation pattern. The most likely site of involvement is

- (a) anterior horn cell
- (b) peripheral nerve
- (c) neuromuscular junction
- (d) muscle

72. Confirmation of the diagnosis of Hirschsprung disease is by

- (a) barium enema
- (b) sigmoidoscopy
- (c) rectal biopsy
- (d) family history

73. Subacute sclerosing panencephalitis is associated with which of the following viral infections ?

- (a) Mumps
- (b) Measles
- (c) Rubella
- (d) Poliomyelitis

74. Match List I with List II and select the correct answer using the code given below the Lists :

List I (Disease)	List II (CSF analysis)
A. Acute pyogenic meningitis	1. Normal CSF
B. Tubercular meningitis	2. Elevated proteins with no cells
C. Gullian-Barre syndrome	3. Elevated protein and cells (mainly polymorphs)
D. Neurocysticercosis	4. Elevated proteins and cells (mainly lymphocytes)

Code :

	A	B	C	D
(a)	4	2	1	3
(b)	4	3	2	1
(c)	3	4	2	1
(d)	3	4	1	2

75. Pseudotumour cerebri is characterized by all of the following *except*

- (a) increase in intracranial tension
- (b) blurred vision and diplopia
- (c) focal neurological signs
- (d) self-limiting condition

76. Vitamin K-dependant clotting factors include all the following *except*

- (a) Factor II
- (b) Factor VIII
- (c) Factor IX
- (d) Factor X

77. A mother brings her 2-year old boy with short history of pallor. Examination reveals pallor, petechiae and splenomegaly. Which of the following is the most likely diagnosis ?

- (a) Thalassemia
- (b) Acute leukaemia
- (c) Hodgkin's lymphoma
- (d) Idiopathic thrombocytopenic purpura

78. Match List I with List II and select the correct answer using the code given below the Lists :

List I (Disease)	List II (Clinical feature)
A. Acute lymphoblastic leukaemia	1. Recurrent knee joint swelling
B. Juvenile rheumatoid arthritis	2. Lymphadenopathy with petechiae
C. Thalassemia	3. Swelling of small joints of hands
D. Haemophilia	4. Hepatosplenomegaly with severe pallor

Code :

	A	B	C	D
(a)	4	1	2	3
(b)	2	4	1	3
(c)	2	3	4	1
(d)	4	2	3	1

79. Which of the following cells in peripheral blood smear are necessarily increased in all haemolytic anaemias ?
- Sickle cells
 - Target cells
 - Burr cells
 - Reticulocyte cells
80. Which of the following is *not* a naturally occurring anticoagulant in the body ?
- Protein C
 - Protein S
 - Antithrombin III
 - Von Willebrand Factor
81. What is the earliest gestational age at which iodine trapping occurs in foetal thyroid ?
- 4 – 6 weeks
 - 8 – 10 weeks
 - 12 – 14 weeks
 - 16 – 18 weeks
82. Which of the following inborn errors of metabolism can give rise to thromboembolic manifestation in a child ?
- Phenylketonuria
 - Homocystinuria
 - Galactosaemia
 - Gaucher's disease
83. In an infant born to a HIV-infected mother, at what age of child the ELISA test can reliably diagnose HIV infection ?
- 3 months
 - 9 months
 - 12 months
 - 18 months
84. The most likely diagnosis in a 2-day old neonate with indirect hyperbilirubinaemia, positive direct Coombs' test and spherocytes on peripheral blood smear is
- Cephalhematoma
 - ABO incompatibility
 - Hereditary spherocytosis
 - G-6-P-D deficiency
85. The triad of 'diarrhoea, dementia and dermatitis' is characteristically seen in the deficiency of vitamin
- Riboflavin
 - Niacin
 - Thiamine
 - Pyridoxine
86. Hyperkalaemia can occur in all the following *except*
- Cushing's syndrome
 - Crush injuries
 - Renal failure
 - Intravascular haemolysis

87. An asymptomatic 3-year old girl is brought to the emergency department after 2 hours of accidental kerosene ingestion. The appropriate management is
- gastric lavage
 - inducing emesis
 - chest X-ray and observation
 - charcoal haemoperfusion
88. A 28-year old woman suffering from sickle cell anaemia marries a 31-year old with no abnormality. What are the respective probabilities to have (i) sickle cell disease and (ii) sickle cell trait in their offspring ?
- 0% and 100%
 - 25% and 50%
 - 50% and 25%
 - 25% and 25%
89. What is the naturally occurring form of vitamin D in the human skin ?
- Calciferol
 - 7 hydrocholesterol
 - 25 hydroxy cholecalciferol
 - 1, 25 dihydroxy cholecalciferol
90. Warthin-Finkelday giant cells in lymphoid tissue are characteristic of which of the following infections ?
- Mumps
 - Measles
 - Congenital cytomegalovirus infection
 - HIV infection
91. Some antibiotics act as ionophores, which means that they
- interfere directly with bacterial cell wall synthesis
 - increase cell membrane permeability to specific ions
 - inhibit both transcription and translation
 - inhibit electrophoretic separation of ions
92. Polymerase Chain Reaction technique is used for
- DNA amplification
 - DNA sequencing
 - screening gene libraries
 - synthesis of polymerases
93. In the hills, the soil erosion takes place due to rapid flow of rain water. It can be *most* effectively controlled by
- building dykes
 - channelizing the water
 - jhum cultivation
 - terrace cultivation
94. The chemical substance "Taxol" is said to have curative value for malignant tumours. It is obtained from the
- shoots of *Taxodium* sp.
 - roots and fruits of *Taxodium* sp.
 - bark from stem of *Taxus* sp.
 - roots of *Taxus* sp.

95. Greenhouse gases are called as such because they

- (a) are used in warming plant growth chambers
- (b) help in maintaining atmospheric O₂ and CO₂ balance
- (c) are produced by green photosynthesizing plants and are trapped in the Earth's atmosphere
- (d) prevent the escape of heat waves reradiated from the Earth's surface

96. *Bacillus thuringiensis* is used to control

- (a) bacterial pathogens
- (b) fungal pathogens
- (c) insect pests
- (d) nematodes

97. Which group of algae can provide nitrogenous nutrients to paddy cultivation under natural field conditions ?

- (a) Blue-green algae
- (b) Brown algae
- (c) Green algae
- (d) Red algae

98. Tissue culture technique can be used for

1. developing virus-free plants
2. multiplication of elite genotypes of useful trees
3. production of secondary metabolites of plants

Select the correct answer using the code given below :

- (a) 1 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

99. Which one of the following is an appropriate description of mangrove plants ?

- (a) Large wood-yielding trees of the tropical forests
- (b) Plants in marshy areas with breathing roots
- (c) Succulent plants that can thrive in arid/desert areas
- (d) Vast grassland areas interspersed with deciduous trees and thorny bushes

100. Consider the following :

1. Ethylene dibromide
2. Potassium meta-bisulphate
3. Sodium benzoate

Which of the above is/are used as food preservatives ?

- (a) 1 and 2 only
- (b) 3 only
- (c) 2 and 3 only
- (d) 1, 2 and 3

101. Rayon fibre is made from
- cellulose
 - isoprene
 - polyethylene
 - polyvinyl chloride
102. Which of the following parts/spectra of solar radiation is/are mostly absorbed by the leaves of green plants ?
- Infrared
 - Red and blue
 - Violet, indigo and orange
 - Ultraviolet, green and orange
103. Other than nitrogen and oxygen, which one of the following is the most abundant gas in the Earth's atmosphere ?
- Argon
 - Carbon dioxide
 - Hydrogen
 - Methane
104. Among the following regions of India, which one receives the highest annual average monsoon rainfall from June to September ?
- Gangetic West Bengal
 - Eastern Uttar Pradesh
 - Western Uttar Pradesh
 - Punjab
105. In which one of the following types of forests is teak a dominant tree species ?
- Tropical rain forest
 - Tropical deciduous forest
 - Tropical thorn and scrub forest
 - Temperate forest with grasslands
106. Consider the following statements :
- Carbon dioxide is released from the interior of the Earth during volcanic eruption.
 - Carbon dioxide corrodes the metal surfaces.
- Which of the statements given above is/are correct ?
- 1 only
 - 2 only
 - Both 1 and 2
 - Neither 1 nor 2
107. With reference to the 'Protected Areas' in India, consider the following statements :
- In a Wildlife Sanctuary, limited biotic interference is permitted.
 - A Biosphere Reserve is declared to conserve a few specific species of flora and fauna.
 - The boundaries of a National Park are defined by legislation.
- Which of the statements given above is/are correct ?
- 1 only
 - 2 and 3 only
 - 1 and 3 only
 - 1, 2 and 3

108. Which one of the following pollutants causes surface deterioration of leather goods ?
- (a) Hydrogen sulphide
 - (b) Nitrogen dioxide
 - (c) Ozone
 - (d) Sulphur dioxide
109. The Finance Commission derives its authority from the
- (a) Constitution of India
 - (b) Parliament of India
 - (c) President of India
 - (d) Supreme Court of India
110. Which of the following regions has the lowest atmospheric humidity ?
- (a) Equatorial
 - (b) Monsoon
 - (c) Prairies
 - (d) Polar
111. Cartagena Protocol on Biosafety deals with
- (a) establishing or promoting *in situ* conservation facilities for rare and endangered organisms
 - (b) maintaining the worldwide network of gene banks for all the known flora and fauna
 - (c) monitoring and regulating the development of living modified organisms
 - (d) ensuring safe handling, safe use and safe trans-boundary movement of living modified organisms
112. Which one of the following is a secondary pollutant ?
- (a) Benzene
 - (b) Nitrogen oxide
 - (c) Ozone
 - (d) Sulphur dioxide
113. A transition zone or region separating two biomes is known as
- (a) ecocline
 - (b) ecological niche
 - (c) ecotone
 - (d) ecotype
114. Eutrophication of water bodies is mainly caused by
- (a) carbonates and oxides
 - (b) hydrocarbons and metals
 - (c) carbonates and sulphates
 - (d) phosphates and nitrates
115. Consider the following :
1. Coal pits
 2. Sewers
 3. Volcanic eruptions
- Which of the above is/are the source/ sources of H_2S in the environment ?
- (a) 1 and 2 only
 - (b) 2 only
 - (c) 1 and 3 only
 - (d) 1, 2 and 3

116. Which of the following is/are the source/sources of methane, a greenhouse gas ?

1. Cattle
2. Rice fields
3. Wetlands

Select the correct answer using the code given below :

- (a) 1 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

117. As per the Constitutional provisions, if a Panchayat is dissolved, elections are to be held within

- (a) 1 month
- (b) 3 months
- (c) 6 months
- (d) 1 year

118. The release of which one of the following into ponds and wells helps in controlling the mosquitoes ?

- (a) Crab
- (b) Dogfish
- (c) Gambusia fish
- (d) Snail

119. Consider the following statements :

1. Infant mortality rate takes into account the death of infants within a month after birth.
2. Infant mortality rate is the number of infant deaths in a particular year per 100 live births during that year.

Select the correct answer using the code given below :

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

120. In India, sovereignty resides in the

- (a) Constitution of India
- (b) People of India
- (c) President of India
- (d) Parliament of India

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