



(University of Choice)

**MASINDE MULIRO UNIVERSITY OF
SCIENCE AND TECHNOLOGY
(MMUST)**

MAIN CAMPUS

UNIVERSITY EXAMINATIONS

2021/2022 ACADEMIC YEAR

SECOND TRIMESTER EXAMINATION, YEAR IV

FOR THE DEGREE

OF

BACHELOR OF MEDICINE AND SURGERY

COURSE TITLE: JUNIOR CLERKSHIP CHILD HEALTH AND PEDIATRICS

COURSE CODE: MCS 418

DATE: 15TH AUGUST 2022

TIME: 9.00 am

INSTRUCTIONS TO CANDIDATES

This paper has 3 sections.
Attempt all questions.

DURATION: 3 Hours

SECTION A: MULTIPLE CHOICE QUESTIONS

1. The following are known metabolic causes of fulminant hepatic failure, **EXCEPT**:
 - A. Hereditary tyrosenemia
 - B. Wilsons disease
 - C. Amanita phaloides toxicity
 - D. Defective beta-oxidation of fatty acids
2. **UNTRUE** of precipitating factors of hepatic encephalopathy:
 - A. Infection
 - B. Early initiation of dialysis
 - C. Excess dietary proteins
 - D. Gastrointestinal bleeding
3. The following are complications of acute hepatic failure, **EXCEPT**:
 - A. Cerebral edema
 - B. Hypoglycemia
 - C. Acid-Base stability
 - D. Hepatopulmonary syndrome
4. **TRUE** concerning hepatitis A viral infection, **EXCEPT**:
 - A. Enveloped RNA virus
 - B. Has an incubation period of 15 to 45 days
 - C. Replication is limited to the liver
 - D. Diminished infectivity upon development of jaundice
5. The following is incorrectly matched:
 - A. Hepatitis B virus → Liver cirrhosis
 - B. Hepatitis D virus → DNA
 - C. Hepatitis A virus → indirectly cytopathic
 - D. Hepatitis C virus → hepatocellular carcinoma
6. The following is not a cause of Primary Nephrotic syndrome:
 - A. Systemic Lupus erythematosus
 - B. Minimal change disease
 - C. Focal segmental glomerulonephritis
 - D. Membranous nephropathy
7. **TRUE** concerning the diagnostic investigation of nephrotic syndrome, **EXCEPT**:
 - A. Serum Lipid profile
 - B. Urinalysis
 - C. Lever function tests
 - D. Blood culture and sensitivity

8. The following are complications of nephrotic syndrome, **EXCEPT**:
- A. Hypercalcemia
 - B. Infections
 - C. Deep venous thrombosis
 - D. Malnutrition
9. The following are causes of liver cirrhosis, **EXCEPT**:
- A. Nonalcoholic steatohepatitis
 - B. Cystic fibrosis
 - C. Systemic Lupus Erythematosus
 - D. Autoimmune hepatitis
10. **TRUE** of urinary tract infection in children, **EXCEPT**:
- a. It is more prevalent in boys than girls
 - b. *Escherichia coli* is the commonest causative agent
 - c. May lead to systemic hypertension later in life
 - d. May result from hematogenous spread
11. The following characterizes nephrotic syndrome, **EXCEPT**:
- a. Hypercholesterolemia
 - b. Hyperalbuminemia
 - c. Edema
 - d. Hyper-proteinuria
12. **UNTRUE** of the complications of nephrotic syndrome, **EXCEPT**:
- a. Bleeding tendencies
 - b. Septic shock
 - c. Malnutrition
 - d. Cerebrovascular accident
13. **TRUE** of the etiological factors of acute glomerulonephritis
- a. Clinically manifests within 1 week of streptococcal infection
 - b. Associated with carditis
 - c. Rarely accompanied with acute kidney injury
 - d. Associated with end stage kidney disease
14. **Untrue** regarding nephrolithiasis in children
- a. Recurrence rate at one year is approximately 60%
 - b. Calcium containing calculi are the most prevalent
 - c. Has a higher prevalence in boys than girls
 - d. Renal colic is experienced in majority of patients
15. The following are metabolic risk factors for nephrolithiasis, **EXCEPT**:
- a. Hypercalciuria
 - b. Hyperoxaluria
 - c. Hypercitraturia
 - d. Hyperuricosuria

16. **Untrue** of the predisposing factors to development of renal calculi:
- Cystic fibrosis
 - Ketogenic diet
 - Urinary tract infection
 - Vitamin D deficiency
17. The following are intrinsic causes of acute kidney injury, **EXCEPT**:
- Posterior urethral valves
 - Aminoglycoside overdose
 - Acute tubular necrosis
 - Hemoglobinopathies
18. True of transudates, **EXCEPT**:
- Peritoneal dialysis is a risk factor
 - Have high white cell counts
 - Results from ultrafiltration of plasma into the pleural space
 - May result from thromboembolic events
19. The following is true regarding characteristics of exudates, **EXCEPT**:
- There is high cholesterol level
 - The LDH level is equal to serum level
 - Protein levels are high
 - High haptoglobin and ceruloplasmin levels
20. The following are extrahepatic manifestations of Hepatitis C viral infection, **EXCEPT**:
- Nephrotic syndrome
 - Hepatocellular carcinoma
 - Membranoproliferative glomerulonephritis
 - Cutaneous vasculitis
21. **Untrue** of the risk factors for Hepatitis C viral infection:
- Hemodialysis
 - Intravenous drug use
 - Ingestion of contaminated water
 - Baby born to Hepatitis C positive mother
22. True of the indications for immediate initiation of treatment for Hepatitis B virus infection, **EXCEPT**:
- Acute liver failure
 - Cirrhosis with high HBV DNA
 - Portal hypertension
 - Patients in the immune tolerant phase
23. The following has negligible role in treatment of hepatitis B viral infections:
- Entecavir
 - Telbivudine
 - Stavudine
 - Adefovir

24. The following are etiopathophysiological mechanisms of hepatic encephalopathy,

EXCEPT:

- A. Accumulation of toxins in the brain
- B. Raised levels of brain myoinositol
- C. Production of false neurotransmitters
- D. Accumulation of neuroinhibitory substances

25. **Untrue** concerning prevention of Hepatitis A infection:

- A. Proper hand washing
- B. Chlorination of water
- C. Vaccination of persons with clotting disorders factors
- D. Reliance on imported foods

26. The following is false concerning Hepatitis B transmission:

- A. Transmitted percutaneously
- B. Feco-oral route play a major role in transmission
- C. Perinatal transmission is the main mode in children
- D. Transmitted through blood transfusion

27. **TRUE** concerning management of Hepatitis C virus infection:

- A. Supportive therapy plays a major role
- B. Pegylated interferon treatment leads to definitive cure
- C. Vitamin E supplementation has no role
- D. Use of tenofovir is associated with reduced mortality

28. A 5 year old boy presents to the casualty with a 2 day history of cough and difficulty in breathing. He is found to have an SPO₂ of 70%. The following is true about the boy ,

EXCEPT:

- A. Immediate admission should be effected
- B. Oxygen therapy via nasal prongs at 1L/minute should be initiated immediately
- C. Intravenous ceftriaxone is the preferred first line antibiotic therapy
- D. Nutritional support is vital for the overall outcome of the patient

29. An 11 year old boy presents to the hospital with a 5 day history of facial puffiness, skin ulcers, frontal headache and reduced urine output. On assessment, his blood pressure is found to be 159/100 mmHg. **UNTRUE** about this boy:

- A. Urinalysis is likely to have red blood cell casts
- B. May lead to End stage renal disease
- C. Albumin infusion is the recommended first line regimen
- D. The condition requires long term follow up

30. A 5 year old boy presents with a 5 month history of progressive abdominal swelling and loss of body weight. On examination, he is jaundiced, wasted and has periumbilical vascular markings with fluid thrill. **TRUE** concerning this patient:

- A. He is likely to develop hematemesis
- B. Prothrombin time remains within normal range
- C. Liver function tests are the Gold standard for diagnosis

- D. Renal function is rarely affected
31. **TRUE** about Hepatitis B virus infection, **EXCEPT**:
- A. Serum hepatitis B e antigen is a marker of active replication
 - B. Genotype C is associated with poor prognosis
 - C. Presence of nucleocapsid core antigen in serum is a marker of clearance of infection
 - D. Supra-infection with hepatitis D virus is associated with rapid progression of hepatocyte necrosis
32. The following is **TRUE** about Hepatitis C viral infection:
- A. More prevalent among children than adults
 - B. It is a double stranded DNA virus
 - C. Illegal intravenous drug use is significant in transmission
 - D. Greater than 95% of acute infections are symptomatic
33. **TRUE** of allergic march:
- A. Allergic rhinitis commonly occurs between 2 and 4 years of age
 - B. Food allergies are more common during puberty than infancy
 - C. Asthma is mostly diagnosed at one year of age
 - D. Atopic dermatitis is associated with filaggrin gene mutation
34. Trevor, an 8 year old boy, is a known HIV positive patient on ART. He presents in the outpatient clinic with a 3 day history of fast breathing, cough and fever. The following information is useful in the management of this patient, **EXCEPT**:
- A. History of contact with an adult with chronic cough
 - B. Latest viral load
 - C. Positive family history of hypertension
 - D. The current ART regimen
35. The following is **INCORRECTLY** matched with etiopathophysiological mechanism:
- A. *Mycoplasma pneumoniae* → mucocilliary dysfunction
 - B. *Staphylococcus aureus* → bronchopulmonary fistulae
 - C. *Streptococcus pneumoniae* → edema induction
 - D. Cytomegalovirus → pneumatoceles
36. **UNTRUE** of viral hepatitis, **EXCEPT**:
- a. Hepatitis E virus is the leading cause of fulminant hepatic failure in Kenya
 - b. Hepatitis A virus is the second commonest cause of liver cirrhosis among the Caucasians
 - c. Adenovirus has no role
 - d. EBV is associated with hepatocellular carcinoma
37. The following is untrue concerning prevention of hepatitis A viral infection:
- a. Administration of a two-dose vaccine
 - b. Proper food preparation
 - c. Use of Lamivudine
 - d. Post-exposure administration of Immune globulin

38. True of hepatitis D viral infection, **EXCEPT**:
- It is a DNA virus
 - Requires host's RNA polymerase II for replication
 - Superinfection with Hepatitis B virus is associated with rapid progression to fulminant hepatic failure
 - Infection does not outlast hepatitis B infection
39. The following is true about the etiology of pulmonary Hypertension, **EXCEPT**:
- Herpes virus 8
 - Moyamoya disease
 - Right ventricular dysfunction
 - Recurrent pulmonary emboli
40. Untrue of the pathogenetic mechanisms for pulmonary hypertension:
- Cellular proliferation
 - Fibrosis
 - Thrombolysis
 - Vasoconstriction
41. The following has a role in diagnostic evaluation of pulmonary hypertension, **EXCEPT**:
- V/Q scan
 - Cardiac catheterization
 - Full blood count
 - Echocardiography
42. The following is not used in the treatment of pulmonary hypertension:
- Sildenafil
 - Diltiazem
 - Bosentan
 - Enalapril
43. Untrue of the prevention of pulmonary hypertension:
- Cessation of cigarette smoking
 - Proper treatment of respiratory infections
 - Vaccination
 - Epoprostenol
44. True of cardiomyopathies **EXCEPT**:
- Hypertrophic cardiomyopathy is the most prevalent
 - Familial cases account for up to 50%
 - Ventricular arrhythmias are common
 - Associated with systemic embolization
45. Acute glomerulonephritis is not characterized by the following:
- Hematuria
 - Elevated systemic blood pressure
 - Raised antistreptolysin-O titers
 - No role for salt restriction in the acute phase

SECTION B: SHORT ANSWER QUESTIONS (SAQS)

1. Diana is a 7-year-old girl who presented at the pediatric casualty department with sudden onset of right lumbar region pains, vomiting and profuse sweating. Plain abdominal X-Ray shows a radio-opaque lesion in the right ureter with markedly dilated proximal portion of the ureters.
 - a. Outline five risk factors for this condition (5 marks)
 - b. Describe the management of this condition (5 marks)
2. Outline the etiological classification of pulmonary hypertension (5 marks)
3. Describe the pathophysiology of Hepatitis B viral infection (10 marks)
4. Urinary tract infections are more prevalent in girls than boys.
 - a. Outline 3 the anatomical differences that predispose to this scenario (6 marks)
 - b. Highlight 4 diagnostic investigations that will aid in the management of urinary tract infection children (4 marks).

SECTION C: LONG ESSAY QUESTIONS (LEQS)

1. Rachael, a 13-year-old girl presents to the pediatric outpatient clinic with a 2-week history of yellowness of the eyes, abdominal pain and itchiness of the skin. On physical examination, she is found to have a GCS of 11/15 with tender hepatomegaly.
 - a. Highlight 5 etiological factors for this condition (5 marks)
 - b. Outline 5 diagnostic investigations that will assist in the management of this child (5 marks)
 - c. Describe the management of this condition (10 marks)
2. Gregory is a 9-year-old boy who was brought to the pediatric outpatient clinic where he was reported to have a 5-day history of facial puffiness and lower limb swelling and a one-day history of reduced urine output. On clinical assessment, he had ascites and a normal blood pressure reading. Urinalysis showed proteinuria.
 - a. What pertinent history would be required to aid in the management of this child? (5 marks)
 - b. Outline 5 etiological factors involved in this condition (5 marks)
 - c. Discuss the management of this condition (10 marks)