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POSTGRADUATE INSTITUTE OF MEDICINE
UNIVERSITY OF COLOMBO

MD (PAEDIATRICS) EXAMINATION – JULY/AUGUST 2021

Date:- 27th July 2021 **Time:-** 9.00 a.m. – 12.00 noon

PAPER I
(STRUCTURED ESSAY QUESTIONS)

Answer **all five (05)** questions.
Answer each question in a **separate book.**

1.

1.1. Define "neutral thermal environment" (20 marks)

1.2. Outline the reasons which make the low birthweight newborns more prone to hypothermia. (15 marks)

1.3. Name the different **grades** of hypothermia in a neonate with the relevant temperature ranges. (30 marks)

1.4. List five (05) adverse consequences of inadequately managed hypothermia in newborns. (15 marks)

1.5. List ten (10) important practices which will maintain the "warm chain'' of a term newborn in the delivery room. (20 marks)

2.

2.1. Define delayed puberty. (10 marks)

2.2. Outline the **main** three (03) categories of delayed puberty in a female child giving one example for each category. (15 marks)

2.3. State the specific investigations with expected findings that would enable you to differentiate between the three (03) main categories mentioned in question 2.2. (15 marks)

2.4. Briefly mention the principles of management including the investigations of the patients mentioned under each category in question 2.2. (30 marks)

2.5. Outline the management aspects of a15 year old boy diagnosed with Klinefelter syndrome. (30 marks)

Contd……./2-

3. As a Paediatrician appointed to District General Hospital, the Regional Director of Health Services, seeks your assistance for a campaign to increase the public awareness of autism spectrum disorder (ASD).

3.1. State three (03) main aims of such a campaign. (15 marks)

3.2. Mention four (04) main categories of stakeholders you will identify for this campaign. (20 marks)

3.3. Briefly outline the role of each category of stakeholders mentioned above (3.2), in improving the outcome of children with ASD. (30 marks)

3.4. List the main aspects in the management of a 20-month-old child diagnosed with ASD. (35 marks)

4.

4.1. List ten (10) consequences of posterior urethral valves in children. (20 marks)

4.2. Enumerate the steps in the management of a five-year-old boy with suspected posterior urethral valves. (40 marks)

4.3. List five (05) unfavorable prognostic factors in patients with posterior urethral valves. (25 marks)

4.4. List three (03) intrauterine management options for lower urinary tract obstruction. (15 marks)

5.

5.1. What is meant by cortical / cerebral visual impairment (CVI)? (30 marks)

5.2. List 5 **visual behavioral** characteristics in children with CVI. (20 marks)

5.3. Discuss how improved antenatal and perinatal care could reduce the burden of CVI. (50 marks)

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Date:- 28th July 2021 **Time:-** 9.00 a.m. – 12.00 noon

PAPER II - CASE HISTORIES

Answer **all five (05)** questions.
Answer each question in a separate book.

1. A 15-month-old boy presents with jaundice for 2 weeks. He had been treated for prolonged episodes of acute gastroenteritis on several occasions. During these episodes, stools were bulky and offensive. He had one episode of pneumonia. Sensorineural deafness had been detected recently. He had pruritus during the last 5 months which became more intense over the last 2 weeks.

   The birth history had been uneventful. He was the second child of a consanguineous marriage. The parents were illiterate coming from an urban slum area.

   On examination

Weight 6kg	< 3SD
Length 65cm	< 3SD
Weight for length	< 3SD

   He was alert and well oriented, had no dysmorphic features. He was icteric and pale. There were no bleeding manifestations. Liver span was 4 cm with firm splenomegaly.

Full blood count		
Haemoglobin	8g/dL	(11 - 14)
White cell count	8.6	(4-11)
	N - 52%, L - 46%	
Total bilirubin	3.2 mg/dL	(0.2 -.1.2)
Direct bilirubin	0.9 mg/dL	
SGPT	87 IU/L	(<40)
SGOT	66 IU/L	(<40)
Gamma GT	11 IU /L	(9-48)
PT	17 sec	(14)
INR	1.6	
Total protein	50 g/L	(60 -75)
Albumin	24 g/L	(35 -50)

Contd…./2-

Blood picture	Hypochromic microcytic red cells. WBC and platelets normal.
Ultrasound scan abdomen	Findings are suggestive of cirrhosis with evidence of portal hypertension

1.1. Mention the most likely diagnosis. (35 marks)

1.2. Name two (02) specific investigations that will be helpful to arrive at the above-mentioned diagnosis. (20 marks)

1.3. Briefly describe four (04) important steps in the acute management of this patient. (20 marks)

1.4. Mention five (05) important aspects of planning the long-term management. (25 marks)

Contd…./3-

2. An 8-month-old baby was admitted with poor feeding for 3 days. She has not passed urine for 12 hours. There had been a prolonged hospital stay after birth and had required a colostomy. Diagnosis cards were not available. Apart from the mild motor delay, rest of the development was normal.

On examination she looked ill, less active, pale and tachypnoeic. She had an equinus deformity on the left foot. Abdomen was distended. Genitalia were normal. A grade 3 systolic murmur was heard on the left upper sternal edge. Rest of the system examination was normal.

A urethral catheter was inserted and 150ml of urine was drained.

The initial investigations revealed

Venous blood gas		
pH	7.21	(7.35 - 7.45)
pO_2	35 mmHg	(30 - 55)
pCO_2	36 mmHg	(41 - 51)
HCO_3^-	13 mmol/L	(23 - 29)
Haemoglobin	6.4 g/dL	(11- 12.5)
Serum sodium	121 mmol/L	(135 - 145)
Serum potassium	6.4 mmol/L	(3.5 - 6)
Serum phosphate	2.9 mmol/L	(1.6 -2.1)
Blood urea	25 mmol/ L	(< 4)
Serum creatinine	600 µmol/L	(< 45)
Random blood sugar	4.0 mmol/L	(3.3 - 5.5)

2.1. What is the complete diagnosis? (30 marks)

2.2. Mention two (02) contributory factors for the acute deterioration. (20 marks)

After the initial management, the investigations were repeated.

Serum sodium	126 mmol/L	(135 - 145)
Serum potassium	5.4 mmol L	(3.5 - 6)
pH	7.32	
HCO_3^-	18 mmol/L	

A few hours later, she developed a generalized tonic clonic seizure, which lasted for 3 minutes.

2.3. What is the most likely reason for the seizure? (10 marks)

2.4. List four (04) most important steps in the management of this patient in the next 48 hours. (40 marks)

Contd..../4-

3. A 6-year-old boy was brought with worsening agitation, and abnormal posturing of limbs for 3 days. He was previously diagnosed with learning difficulties and autistic spectrum disorder and was on regular follow up. He has shown some improvement in social development. However, he was diagnosed to have hyperactive behaviour and had been started on risperidone a month ago. He is immunized appropriately. Mother is a teacher and is pregnant with the second child.

   On admission, axillary temperature was 40.5°C. He had sunken eyes with poor skin turgor. He was restless and had tremor. Glasgow coma scale was 14/15. He had profuse sweating. Heart rate fluctuated between 110-130 bpm. Blood pressure was 90/60 mmHg. Neurological examination revealed opisthotonic posture with extensor rigidity. However, there were no focal deficits.

   Investigation findings are as follows

Investigation	Result	Reference
Full blood count		
WBC	12.8 x 10^9/L	(4-11)
	N - 58%,	L- 42%
Haemoglobin	12.3 g/dl	(11-14)
Platelet count	324 x 10^9/L	(150-450)
CRP	06 mg/L	(<6)
ESR	10 mm 1st hour	
Random blood sugar	70 mg/dL	
Serum sodium	135 mmol/L	(135-145)
Serum potassium	5.2 mmol/L	(3.5-5.5)
Blood urea	4.5 mmol/L	(2.5-6.5)
Serum creatinine	35 µmol/L	(20-40)
SGOT	127 IU/L	(<40)
SGPT	102 IU/L	(<56)
Serum protein	60 g/L	(60 -75)
Serum albumin	40 g/L	(35 -50)
Urine full report		
Red cells	2-3/hpf	
Pus cells	6-8/hpf	
Casts	Nil	
Protein	1+	
Lactate dehydrogenase	750 U/L	(140-300)
Creatine phosphokinase	3250 U/L	(39-308)
EEG	Normal	
CT scan brain (non-contrast)	Normal	

3.1. Mention the most likely diagnosis. (20 marks)

3.2. Mention four (04) important immediate measures that you would consider in managing this child. (40 marks)

3.3. List two (02) complications. (30 marks)

3.4. Explain the aetio-pathogenesis of this condition. (10 marks)

Contd…./5-

4. An 8-year-old girl was brought to the emergency department with high fever of 3 days and drowsiness on the day of admission. She was on co-amoxyclav and cetirizine prescribed by a general practitioner.

During the last 4 months she sought treatment from the general practitioner on many occasions for recurrent fever and joint pain. She had responded to short courses of oral ibuprofen.

Investigations that were done two weeks ago revealed

Hemoglobin	$12.1 \times 10^9/L$	(11-14)
White cell count	$5.13 \times 10^9/L$	(4-11)
Platelet count	$580 \times 10^9/L$	(150-450)
ESR	90 mm 1st hour	

On admission she was febrile and miserable. She had generalised maculo-papular rash, cervical lymphadenopathy, and tender hepatomegaly. Two hours after admission she developed a brief generalised convulsion which was settled without interventions.

The investigation results are as follows.

Hemoglobin	$8.1 \times 10^9/L$	(11-14)
White cell count	$2.1 \times 10^9/L$	(4- 11)
Platelet count	$180 \times 10^9/L$	(150 – 450)
CRP	120mg/dL	(<6)
ESR	70mm 1st hour	
Serum aspartate aminotransferase	70 IU/L	(< 40)
Serum alanine aminotransferase	90 IU/L	(< 40)
Serum glutamyl transferase	56 IU/L	(9 - 48)
Echocardiogram	Normal	

4.1. What is the complete diagnosis? (30 marks)

4.2. Mention six (06) other important investigations that would support the diagnosis of the current presentation with the expected findings. (30 marks)

4.3. Mention five (05) pharmaco-therapeutic agents that can be used to treat the acute presentation. (40 marks)

5. A 12-year-old boy was admitted with a 4-day history of dark urine, abdominal pain, and vomiting. Mother states that there were two transient episodes of dark coloured urine in the past, which resolved spontaneously.
He had been investigated for thrombocytopenia five years ago. He was treated with prednisolone and showed some improvement in the platelet count. Currently he is not on any medications. Immunizations are up to date.
Physical examination reveals normal growth parameters. Blood pressure is 110/70 mmHg. He is pale and the rest of the clinical examination is unremarkable.

Investigations revealed

Investigation	Result	Reference
Urine microscopy		
Red cells	2-4 /hpf	
White cells	1-2/hpf	
Casts	Nil	
Blood urea	18 mg/dL	(10-20)
Serum creatinine	0.80 mg/dL	(0.6-1.0)
WBC/DC	2 x 10^9/L N - 65%, L - 33%, M - 2%	
Hb	8.8 g/dL	(11-15)
Platelet count	126 x 10^9/L	(150 - 450)
Blood picture	polychromasia and few spherocytes	
Reticulocyte count	3.4%	
Coombs test	Negative	
SGOT	109 IU/L	(<40)
SGPT	170 IU/L	(<40)
Serum sodium	135 mmol/L	(135-145)
Serum potassium	3.7mmol/L	(3.5-5.0)
Serum chloride	105mmol/L	(98-106)
Serum glucose	4.8 mmol/L	(3.3-5.5)
Serum albumin	48g/dL	(40-53)
Ultrasound scan abdomen	Hepatic vein thrombosis	

5.1. What is the complete diagnosis? (30 marks)

5.2. List four (04) investigations you would perform to arrive at the diagnosis. (20 marks)

5.3. Briefly outline the management of this patient. (30 marks)

5.4. List four (04) complications associated with the above condition. (20 marks)