Examination for Diploma in: Pediatrics
Course Title: Pediatrics (PED700)
Date: October 2, 2017 **(Paper I)**
Time allowed: 3 Hours
Total Assessment Marks: 180 **(4 Pages)**

Tanta University
Faculty of Medicine
Department of Pediatrics

All questions should be tried:

Q 1) Pediatric Emergencies (25 marks)

Discuss Pediatric basic life support algorithm and Pediatric advanced life support bradycardia algorithm.

Q 2) Pediatric Cardiology (35 marks)

A. Discuss in brief the early and late manifestations of rheumatic carditis. (15)

B. Mention the clinical diagnosis of dilated cardiomyopathy. (10)

C. Problem solving : (6)

A male child aged 3 years was presented with pallor, perspiration, and palpitation. On examination, he suffered from tachypnea with intercostal retraction. Auscultation of the heart revealed gallop rhythm and left parasternal pan-systolic murmur. Echocardiographic examination was done and reported that the child had large VSD.

1. **What is the grade of respiratory distress in this child?**
2. **What are other investigations needed?**
3. **What are the best 3 lines for management?**

D. MCQs :

1. WPW syndrome is characterized by the following EXCEPT: (2)

a. Short PR interval.
b. Slurred initial upstroke of QRS.
c. Narrow QRS.
d. Usually associated with Ebstein anomaly.

2. First line of treatment of ventricular fibrillation is: (2)

a. IV amiodarone.
b. IV lidocaine.
c. Cardioversion.
d. IV digitalis.

Q 3) Respiratory System (35 marks)

A. Discuss in brief treatment regimen for pulmonary tuberculosis in children. (15)

B. Enumerate risk factors for pulmonary embolism in children. (10)

C. Problem solving: (6)

A 3-year-old boy is brought to the office by his parents as a new patient for well-child examination. Height is in the third percentile, and weight is in the first percentile. During the interview, the parents say that the patient has been treated multiple times since infancy because of sinus infections and pneumonia. They also note that his stools are generally loose, greasy, and mucousy. During physical examination, the patient coughs frequently. No other abnormalities are noted.

1. **What is the most probable diagnosis?**
2. **What are the important investigations to determine the diagnosis?**

3. **What are the respiratory complications of this disease?**

D. MCQs:

1. Asthma triggers include all of the following EXCEPT: **(2)**

a. Exercise.
b. Aeroallergens.
c. Aspirin.
d. Atropine.

2. Which of the following is true about acute epiglottitis? **(2)**

a. It shares a similar etiology to bacterial tracheitis.
b. It is more common in males.
c. Respiratory distress and dyspnea increase in the prone position.
d. Blood picture shows leukopenia.

Q 4) Infectious Diseases (30 marks)

A. Discuss in brief pyrexia of unknown origin. **(12)**

B. Enumerate complications of bacterial meningitis in different pediatric age groups. **(8)**

C. Problem solving: **(6)**

A 7 month old infant presents in November with 3 days of fever with temperature 103.5 F, a mildly injected pharynx, mild cervical lymphadenopathy and diarrhea. The infant has been behaving normally and eating well and has no other symptoms. On the 4th day of the illness, the fever resolves, and a generalized measles like rash appears 12 hr later. The infant appears normal on physical examination.

1. **What is the most likely diagnosis?**
2. **What is the causative organism?**
3. **What is the recommended treatment?**

D. MCQs:

1. Most infections with poliovirus result in illness that is best characterized as: **(2)**

a. Subclinical illness.
b. Non-specific symptoms.
c. Aseptic meningitis.
d. Meningoencephalitis.
e. Paralytic poliomyelitis.

2. The peak incidence of roseola is seen in which of the following age groups: **(2)**

a. Newborns as congenital infection.
b. Children 0-5 years.
c. Children 5-10 years.
d. Children 10-15 years.
e. Adolescents 16 years and older.

Q 5) GIT (25 marks)

A. Write short notes on selective intestinal malabsorption. **(9)**

B. Enumerate causes of constipation. **(6)**

C. Problem solving: **(6)**

A 4 yr old boy has had vomiting and diarrhea for 4 days. He now has had 24 hr of abdominal pain that appears maximal in the right lower abdomen with tenderness and guarding. There is fever, leucocytosis with neutrophilia but urine analysis is free with the exception of 3+ ketonuria.

1. **What is the most likely diagnosis?**
2. **What may abdominal sonar reveal?**
3. **Explain urine analysis data.**

D. MCQs:

1. **Regarding persistent diarrhea, the following is true:** **(2)**

a. It differs from acute diarrhea in the type of causative organism.
b. Antibiotic therapy has a minimal role in the treatment.
c. Mortality does not exceed 3% of cases.
d. Protein energy malnutrition is unusual.

2. **Regarding duodenal atresia:** **(2)**

a. It is the rarest congenital anomaly of the gut.
b. It usually occurs distal to the ampulla of Vater.
c. Barium meal is the gold standard diagnostic investigation.
d. It presents in the newborn by non-bilious vomiting.

Q 6) Hepatology (15 marks)

A. Give a short account on definition and causes of acute liver failure in children. **(5)**

B. Enumerate the different lines of management in an infant with persistent cholestasis. **(3)**

C. Problem Solving: **(3)**

A child aged 6 years presented by melena to the emergency department. On examination: there was mild pallor, hemodynamic stability, and moderate splenomegaly with no lymphadenopathy. CBC, liver function tests, bleeding and coagulation profiles were within normal. Liver size and echogenicity were normal by hepatic US.

1. **What is the most likely diagnosis? Explain why?**
2. **Enumerate two appropriate diagnostic investigations to confirm this diagnosis.**
3. **Enumerate two appropriate therapeutic procedures for such condition.**

D. MCQs:

1. **Which of the following statements about hepatic fibrosis is FALSE?** **(2)**

a. Tissue fibrosis describes the replacement of injured tissue by scar-like extracellular matrix and is the perpetuation of the normal wound-healing response.
b. Chicken-wire fibrosis, a mild fibrosis characterized by the deposition of fine collagen fibers in the sinusoids of the pericentral lobular region, is typical of viral hepatitis.
c. Hepatic stellate cell activation follows a process of initiation and perpetuation.
d. During the course of fibrosis, the extracellular matrix is constantly remodeled, leading to deposition of proteoglycans, fibronectin, hyaluronic acid, and predominantly type 1 collagen.

2. **Which of the following is the most appropriate test in the evaluation of an infant with suspected hereditary tyrosinemia?** **(2)**

a. Urine argininosuccinate.
b. Serum methionine.
c. Serum tyrosine.
d. Urine succinylacetone.

Q 7) Endocrinology (15 marks)

A. Discuss briefly chronic lymphocytic thyroiditis (Hashimoto Thyroiditis): epidemiology, symptoms and signs, investigations needed and treatment. **(5)**

B. Mention the laboratory findings suggestive of Graves' disease. **(3)**

C. Problem solving : **(3)**

A 14-year-old male has a tall stature with eunuchoid body habitus, small testes which feel rubbery, gynecomastia, and has feminine pubic hair distribution. Serum testosterone is low.

1. **What is the probable diagnosis?**
2. **What are the other important investigations required?**
3. **What is the status of plasma gonadotropins levels?**

D. MCQs :

1. As regard to puberty, all the following are true EXCEPT: **(2)**

a. The onset of puberty is more closely correlated with osseous maturation than with chronological age.
b. Black girls have early menarche than white
c. Obese girls often tend to have early menarche.
d. The most common cause of pubertal delay is constitutional.

2. In Constitutional Delay of Puberty, all the following are correct EXCEPT: **(2)**

a. Delayed puberty is often found in siblings or parents.
b. Diagnosis is done by measuring plasma levels of gonadotrophins.
c. Bone age is consistent with degree of pubertal maturation.
d. Often associated with constitutional short stature.

==========**Good Luck**========

Chairman of Department
Prof. Mohamed Ahmed Rowisha.

Examination for Diploma in: Pediatrics
Course Title: Pediatrics
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Time allowed: 3 Hours
Total Assessment Marks: 100 **(4 Pages)**

Tanta University
Faculty of Medicine
Department of Pediatrics

All questions should be tried:

Q 1) Pediatric Cardiology (20 marks)

Discuss etiology, clinical manifestations, diagnosis, prevention and treatment of infective endocarditis in pediatrics.

Q 2) Respiratory System (16 marks)

A. Discuss in brief treatment regimen for pulmonary tuberculosis in children. **(5)**

B. Enumerate risk factors for pulmonary embolism in children. **(4)**

C. Problem solving : **(3)**

A 3-year-old boy is brought to the office by his parents as a new patient for well-child examination. Height is in the third percentile, and weight is in the first percentile. During the interview, the parents say that the patient has been treated multiple times since infancy because of sinus infections and pneumonia. They also note that his stools are generally loose, greasy, and mucousy. During physical examination, the patient coughs frequently. No other abnormalities are noted.

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2. **What are the important investigations to determine the diagnosis?**
3. **What are the respiratory complications of this disease?**

D. MCQs :

1. Asthma triggers include all of the following EXCEPT: **(2)**

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2. Which of the following is true about acute epiglottitis: **(2)**

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b. It is more common in males.
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d. Blood picture shows leukopenia.

Q 3) CNS & Neuromuscular (16 marks)

A. Discuss in brief clinical picture, diagnosis and differential diagnosis of multiple sclerosis in children. **(5)**

B. Enumerate causes of microcephaly in children. **(4)**

C. Problem solving: **(3)**

A 7-year-old Saudi girl, previously well, presented with history of pain in the left leg for 10 days progressing to bilateral weakness of legs and sensory loss. She was febrile for 2 days prior to admission. She had constipation and urinary retention. There was no history of trauma, recent vaccination, cough, skin rash, joint pain, oral ulcers, or any other clinical symptoms or signs suggestive

of SLE. On admission to hospital, she was afebrile with normal vital observations and blood pressure. Examination of her cardiovascular and respiratory system was unremarkable. Abdominal examination revealed distended abdomen as a result of constipation and urinary retention. Neurological examination suggested normal cranial nerve examination with no bulbar palsy. The motor power in the lower limb at presentation was 3/5 with areflexia. The motor power was 5/5 in the upper limbs with brisk tendon reflexes. Her weakness progressed within 2 days with sensory level. MRI T2 spine showed increased signal at T3 and below with distension of the spinal cord. Blood results at presentation showed normal biochemistry but elevated ESR of 35 mg/L (normal range 0-10 mg/L). The complete blood count was normal except for low white blood count of 3.4/L and lymphocytes of 0.67×10^9/L.

1. **Mention the diagnosis and the differential diagnoses.**
2. **What is the treatment?**
3. **What are the other investigations?**

D. MCQs:

1. Holoprosencephaly results from disorder in: **(2)**

a. Neuronal migration.
b. Neural tube.
c. Cerebellar formation.
d. Spinal cord formation.

2. Rolandic seizures are characterized by the following EEG finding: **(2)**

a. Generalized spike slow wave.
b. Centro-temporal spike.
c. Three spike slow wave.
d. Low voltage waves.

Q 4) Hematology & Oncology (16 marks)

A. Give a short account on vitamin K dependent coagulation factors. **(5)**

B. Enumerate causes of spherocytes in CBC. **(4)**

C. Problem solving: **(3)**

A 16 years old boy presents with progressive darkening of the skin and has the following results:
Blood film normal.
Serum iron increased.
Serum ferritin markedly increased.
Total iron binding capacity decreased.
Transferrin saturation increased.
One year later, he developed polyuria and polydipsia and urine test for glucose is positive.

1. **What is the most likely diagnosis?**
2. **How to confirm this diagnosis?**
3. **What is the treatment?**

D. MCQs:

1. The characteristic immunophenotyping of AML (M7) includes: **(2)**

a. Positive CD 13, CD 33 and CD117.
b. Positive CD 64 expression associated with strong CD15 expression.
c. Positive CD 41, CD 42 and CD 61.

2. The characteristic cytogenetic abnormalities of Burkitt's lymphoma include: **(2)**

a. t(8;14), t(8;2), t(8;22).
b. t(10;14) , t(11;14) ,(t(1;14) , t(1;19).

c. t(2;5)(p23;q35).
d. Trisomy 3.

Q 5) Pediatric Emergencies (16 marks)

A. Give short account on goal directed therapy for 3 organ dysfunction in shock. (5)

B. Enumerate 10 red flags in evaluation of patients with syncope. (4)

C. Problem solving: (3)

A 6 year old boy was playing football in the playground on a hot summer's day, when he suddenly collapsed and became unconscious. He remained comatose for approximately 10 minutes during which time he was motionless. On arrival at hospital, he was conscious and complaining of a headache. He had been previously well and was an active child. He had never lost consciousness before and there was no family history of epilepsy or migraine. On examination, there was pallor, pulse 110 /m with no radio-femoral delay, blood pressure 90/60 mmHg, apex forceful and in fifth interspace, soft second heart sound, harsh systolic murmur on left sterna edge, early diastolic murmur in aortic area, other body systems showed normal examination. All investigations including CBC, RBS, urine, electrolytes and Toxicology screen were normal.

1. **Give a further vital investigation.**
2. **What is the most likely diagnosis?**
3. **What is the management of that case?**

D. MCQs:

1. **A clinical finding that BEST distinguishes central hyperventilation rather than tachypnea is: (2)**

a. Arterial carbon dioxide pressure (PaCO2) of 26 mm Hg.
b. Decreased mental status.
c. Nonreactive pupils.
d. Oxygen saturation of 95% by pulse oximetry.

2. **Select ONE true answer about SIADH: (2)**

a. Urine osmolality is usually low.
b. Urine sodium can be high.
c. Serum osmolality is high.
d. It occurs commonly with nephrotic syndrome.

Q 6) Infectious Diseases (16 marks)

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B. Enumerate complications of bacterial meningitis in different pediatric age groups. (4)

C. Problem Solving: (3)

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