



**KISII UNIVERSITY**  
**UNIVERSITY EXAMINATIONS**

**SECOND YEAR EXAMINATION FOR THE AWARD OF THE DEGREE OF**  
**BACHELOR OF SCIENCE IN CLINICAL MEDICINE AND SURGERY**  
**THIRD SEMESTER 2021/2022**  
**[JUNE-SEPTEMBER, 2022]**

**PAED 280: PAEDIATRICS AND CHILD HEALTH I**

**STREAM: Y2S3**

**TIME: 2 HOURS**

**DAY: THURSDAY, 9:00 – 11:00 AM**

**DATE: 08/09/2022**

**INSTRUCTIONS**

***1. Do not write anything on this question paper.***

1. The major cell with endocrinal function in the pancreas and its correctly matched hormone is:
  - A. Alpha cell ( $\alpha$ ) and somatostatin
  - B. Beta cell ( $\beta$ ) and somatostatin
  - C. Delta cell ( $\delta$ ) and glucagon
  - D. Delta cell ( $\delta$ ) and somatostatin
  - E. Alpha cell ( $\alpha$ ) and insulin
2. One of the following is correct regarding transient neonatal diabetes:
  - A. It is more common in the term neonate than the preterm
  - B. It is due to immaturity of islet of Langerhans  $\delta$ -cells
  - C. The baby may look well and sucking vigorously but the sugar levels are low
  - D. This form of diabetes sensitive to exogenous insulin.
  - E. It resolves (honey moon period) only to come later with overt diabetes
3. Regarding the Lente insulin:
  - A. Duration of action is less than 24 hours
  - B. Should not be combined with short-acting insulin during administration
  - C. Lowers blood glucose levels when the rapid-acting insulin stops working.
  - D. None of the above
  - E. It cannot be given twice in one day.

4. Concerning neoplastic disease in children, the following are correct, except:
- A. Wilm's tumour can present with hypertension
  - B. Neuroblastoma can present in infants as opposed to neonates
  - C. Neuroblastoma is almost exclusively a disease of children
  - D. Neuroblastoma is the most common childhood cancer
  - E. Neuroblastoma the most common solid extra-cranial tumor in children
5. Which one of the following statements is correct?
- A. Glucagon inhibits insulin release.
  - B. C-peptide levels are increased in endogenous hyperinsulinemia.
  - C. Insulin increases the absorption of glucose from the gut.
  - D. Catecholamines complements the actions of insulin.
  - E. Proinsulin is derived from insulin
6. Neuroblastoma is;
- A. A tumor found largely in the abdominal sympathetic ganglia
  - B. Most commonly found in the kidneys
  - C. Is easily eradicated by radiotherapy
  - D. Is a secreting tumor which secretes VMA
  - E. None of the above
7. A child of 6 years has apparent hypospadias and no palpable testes. The following would be in favor of the child being female, EXCEPT:
- A. Buccal mucosa chromatin negative
  - B. High urinary 17-ketosteroid excretion
  - C. Abnormally tall stature
  - D. Advanced bone age or maturation
  - E. Development of pubic hair
8. Which statement is true regarding autosomal dominant polycystic kidney disease (ADPKD);
- A. An inherited disorder characterized by cystic dilations only on the tubules of the nephron.
  - B. Cysts in the liver and pancreas are commonly seen in children of all ages
  - C. Few patients present as adults and some present in early childhood and even in utero
  - D. ACE inhibitors may slow the progression of ADPKD especially in patients with proteinuria
  - E. Aminoglycosides are preferred for cyst infection for better penetration into the cysts
9. The following are true regarding glomerular filtration rate (GFR), **except**;
- A. GFR depends upon age, sex, and body size
  - B. The GFR is approximately 130 and 120 mL/min/1.73 m<sup>2</sup> for male and females respectively
  - C. GFR frequently decreases with age
  - D. GFR is measured by targeting certain serum markers

- E. Is measured by determining the urinary clearance of an ideal filtration marker like Inulin
10. using urine output as a criterion for Pediatric (pRIFLE) classification of AKI, single out the statement that is true
- A. Urine output less than 0.5ml/kg/hr experienced over 14 hrs period constitutes kidney injury
  - B. A child who is anuric for over a period of 20 hrs is in kidney loss
  - C. End stage renal disease (ESRD) means being in the failure stage for at least 4 weeks
  - D. Less than 0.2ml/kg/hr of urine production in over 24hrs is regarded as failure
  - E. The goal of frequent renal replacement therapy (RRT) is to improve the outcome of ESRD to Loss
11. Which one of the following is not correct regarding congenital pseudohypoparathyroidism?
- A. Inheritance is autosomal dominant.
  - B. A long 4th metacarpal is always found.
  - C. Parathyroid hormone levels are usually increased.
  - D. Calcium levels are decreased.
  - E. Urine analysis is helpful in confirming the diagnosis
12. In depression in childhood:
- A. A family history is common.
  - B. Suicide attempts are likely to be successful
  - C. Sleep is typically impaired.
  - D. Is more common in pre-pubertal boys than pre-pubertal girls.
  - E. Antidepressant medication is ineffective.
13. The following are causes of short stature safe:
- A. Emotional deprivation.
  - B. Hypothyroidism.
  - C. Achondroplasia.
  - D. Turner's syndrome
  - E. Klinefelter syndrome.
14. A 30 kg child you are taking care of in the hospital is receiving IV fluids in preparation for surgery. You are trying to determine if the fluids are running at an appropriate rate for daily maintenance. What do you determine is the approximate daily fluid requirement for this child?
- A. 3000 mL
  - B. 2400 mL
  - C. 1700 mL
  - D. 1200 mL
  - E. 1000 mL

15. A 14-year-old with type 1 diabetes is admitted with diabetic ketoacidosis. Initial laboratory values are as follows: glucose 563 mg/dL, sodium 136 meq/L, potassium 4.3 meq/L, chloride 107 meq/L, CO<sub>2</sub> 9 meq/L, BUN mg/dL, creatinine 0.6 mg/dL, and calcium mg/dL. She receives a 10 cc/kg bolus of normal saline followed by IV fluids consisting of 1/2 normal saline, as well as IV insulin. Eight hours into therapy, she develops muscle weakness. In addition, her electrocardiogram shows flat T waves as well as U waves. What is the most likely cause of her symptoms?
- A. cerebral edema
  - B. hyponatremia
  - C. Hypoglycemia
  - D. Hypokalemia
  - E. Hypocalcemia
16. Regarding normal renal physiology:
- A. The GFR of a child reaches adult values (corrected for weight) by the age of one year
  - B. Under the influence of ADH, there is increased permeability to water in the DCT
  - C. In the proximal tubules, there is near-complete absorption of glucose and amino acids
  - D. There are approximately one million nephrons in each kidney
  - E. The glomeruli filter approximately 180 litres of fluid daily
17. The following conditions occur due to the presence of circulating antibodies:
- A. Graves disease.
  - B. Hashimoto thyroiditis
  - C. Myasthenia gravis
  - D. Motor neurone disease.
  - E. All the above
18. Post-traumatic stress disorder :
- A. Often involves 'flashbacks'
  - B. May lead to avoidance
  - C. Is an immediate response to a traumatic event
  - D. Can sometimes be treated by play therapy
  - E. May present with lack of energy, panic attacks, anxiety, depression
19. Intersexuality is all the following, except:
- A. Describes variations in sex characteristics including chromosomes, gonads or genitals that do not fit typical binary notions of male or female body
  - B. Is a disorder of sexual development
  - C. Pseudohermaphrodites have been phased out
  - D. Most true hermaphrodites have ambiguous genitalia
  - E. Includes ovotesticular disorder.

20. The 47, XXY karyotype is
- A syndrome characterized by eunuchoidism
  - Characterized by gynecomastia, azoospermia, increased gonadotropin levels and small firm testes
  - Occurs in one out of 1000 liveborn males
  - Carries more than 7 times the risk for breast carcinoma compared with normal males
  - Patients tend to be shorter than average but have disproportionately long legs
21. Androgen deficiency is characterized by all the following except,
- Decreased vigor, physical energy and diminished muscle strength
  - Erectile dysfunction and reduced volume of ejaculate
  - Loss of nocturnal erections and reduced quality of orgasm
  - Difficulty with long-term memory
  - Depression, Low self-esteem, Nervousness
22. Fetal hydronephrosis
- Is a common finding on antenatal US occurring in up to 8 percent of the pregnancies
  - Can be detected as early as the 8th week of gestation
  - Has a decreased risk for Down syndrome and CAKUT
  - The risk of renal and urinary tract abnormality rises with the severity of hydronephrosis
  - The risk of renal and urinary tract abnormality is not related to bilateral fetal hydronephrosis or the presence of oligohydramnios
23. 90-Which of the following statement(s) regarding childhood minimal-change nephrotic syndrome is/are true?:-
- On immunofluorescent studies, deposition is seen along the glomerular basement membrane
  - Hypervolaemia is a common problem
  - Albumin is routinely given to children with proteinuria
  - Long-term cyclophosphamide therapy is beneficial in the steroid resistant group
  - Minimal change disease is a histological diagnosis
24. The following concerning gastrointestinal hormones are true
- Somatostatin reduces gastric motility
  - Gastric distension increased motility
  - Glucagon decreases GI motility
  - Secretin inhibits pancreatic bicarbonate secretion
  - Pancreatic polypeptide inhibits pancreatic secretion
25. A newborn infant is found to be hypothyroid on a newborn screening test. Which one of the following is the most likely cause?
- Defective thyroglobulin iodination
  - Deficiency of thyroid stimulating hormone.

- c. Impaired fetal iodine transport.
  - d. maternal autoantibodies.
  - e. Thyroid dysgenesis.
26. What is not true regarding primary enuresis
- a. Presents at the age of approximately four years.
  - b. Urine analysis will be of value to identify those with renal pathology.
  - c. A pad and bell must wake up the child to be effective in treatment.
  - d. Relapse with tricyclic antidepressant is a common problem.
  - e. Enuresis improves with time even if it is untreated.
27. Not true regarding febrile seizures:
- a. Most commonly occur between the ages of 6 months and 5 years.
  - b. The resting EEG is typically normal.
  - c. Are associated with structural brain abnormalities.
  - d. Are associated with a very slight increase in adult seizure frequency.
  - e. Seizures following perinatal injury may be accompanied by fever.
28. One of the following is not an indication of renal biopsy during the treatment and management of AGN
- a. Hematuria beyond 1 year
  - b. Gross hematuria beyond 3 weeks
  - c. Oliguria beyond 2 weeks
  - d. Severe HTN on presentation
  - e. All the above
29. Brain imaging is strongly indicated in one of the following situations:
- a. After a single unprovoked generalized seizure.
  - b. 8 years old girl with absence seizures and 3/s spike wave discharges on the EEG.
  - c. 6 years old with a right sided focal motor seizure
  - d. In a 9 years old boy with autism.
  - e. None of the above
30. One of the following is not a recommendation for urolithiasis therapy
- a. Avoid large doses of Vitamin D and Vitamin C supplementation
  - b. Increase fluid intake
  - c. Liberal salt intake
  - d. Restricted animal proteins especially in hyperuricemia
  - e. Avoid spinach, nuts, tomato, Brinjal and coffee in patients with risk of oxalate stones

**SECTION B: Attempt all the six (6) questions in this section. Start each question on a new page**

1. Name three basic types of glomerular disease and cite the common pediatric conditions or causes of each type. (10 marks)
2. State what glomerular filtration rate (GFR) is and outline how it is estimated and measured and list the factors which may enhance or impede glomerular filtration. (10 marks)
3. Name five (5) most common psychiatric disorders in children. Give a brief outline on the management of a child with ADHD (10 marks)
4. Give a general classification of seizures. Outline the principles of management of seizures (10 marks)
5. Briefly outline the disorders of male and female gonads. What are ambiguous genitalia? (10 marks)
6. Differentiate between neuroblastoma and nephroblastoma in terms of investigations and treatment. (10 marks)

**SECTION C: Attempt any two questions from this section Start each question on a new page.**

1. Discuss fully the management of a child suspected to have Wilm's tumor (20 marks)
2. Discuss the management of an eight-year-old child thought to have Nephrotic syndrome (20 marks)
3. Discuss hypothyroidism in children (20 marks)