



Please make sure you have 16 pages and 14 questions

**Q1. Growth and Development (7 Marks):**

Q1. Marks: \_\_\_\_\_

**1A: Define Development : (0.5 mark)**

.....  
 .....

/0.5

**1B: Define Failure to thrive (0.5 mark)**

.....  
 .....

/0.5

**1C: Write down the post-natal stages of human growth and development: (2 marks)**

/2

Name of the stage	Duration
1.	
2.	
3.	
a.	
b.	
4.	

**1D: Fill the following table regarding assessment of developmental milestones by age: (4 marks)**

/4

Age (Months)	Gross Motor	Fine Motor
3	..... ..... .....	..... ..... .....
6	..... ..... .....	..... ..... .....
9	..... ..... .....	..... ..... .....
12	..... ..... .....	..... ..... .....

## Q2. Nutrition and Infant Feeding (15 Marks):

Q2. Marks:

**2A:** Fill the following table to define protein calorie malnutrition according to Wellcome classification : ( 3 marks)

/3

Degree of weight loss	Edema	No Edema

**2B:** Enumerate **THREE** absolute contraindications of breast feeding secondary to diseases related to the infant? (1.5 marks).

/1.5

1. ....
2. ....
3. ....

**2C:** Mention the **SEVEN** steps for successful breast feeding: (3.5 marks)

/3.5

1. ....
2. ....
3. ....
4. ....
5. ....
6. ....
7. ....

**2D:** Mention **THREE** biochemical tests that support the diagnosis of early or subclinical protein energy malnutrition : (3 marks)

/3

1. ....
2. ....
3. ....

**2E:** Describe the **TWO** symptoms and **TWO** clinical signs that are suggestive of **EARLY** vitamin D deficiency rickets :( 4 marks)

/4

• Symptoms:

1. ....
2. ....

• Signs:

1. ....  
.....
2. ....  
.....

**Q3: Perinatology and Neonatology (20 Marks):**

Q3. Marks: /20

**3A:** A preterm baby 30weeks gestation is just delivered. You notice that the baby becomes progressively tachypneic with expiratory grunting and intercostal and subcostal retraction:

1. Mention TWO differential diagnoses?

/3

- 1. ....
- 2. ....

2. Enumerate THREE initial investigatory tools to arrive at the underlying etiological diagnosis?

/3

- 1. ....
- 2. ....
- 3. ....

3. Mention FOUR lines of treatment of the most likely diagnosis?

- 1. ....
- 2. ....
- 3. ....
- 4. ....

**3B:** Full Term, breast fed, baby four weeks old referred because of persistent jaundice with total serum bilirubin 17mg/dl and direct bilirubin is 1 mg/dl. Mention FOUR causes that may be associated with this pattern of hyperbilirubinaemia

/4

- 1. ....
- 2. ....
- 3. ....
- 4. ....

**3C:** Define Small for gestational age, SGA infants

/2

.....

**3D:** Enumerate FOUR maternal and FOUR fetal causes of small for gestational age infants

• Maternal causes:

/2

.....  
.....

- 1. ....
- 2. ....
- 3. ....
- 4. ....

• Fetal causes:

/2

- 1. ....
- 2. ....
- 3. ....
- 4. ....

**Q4. Preventive Pediatrics (5 Marks):**

**Q4. Marks:**

**4A: Fill the following table of vaccination schedule for a 2 year-old child coming for immunization for the FIRST time. (2.5 marks)**

/2.5

Age	Type of Vaccine				
24 month					
25 month					
26 month					
27 month					
28 month					

**4B: Mention FIVE Principles of Clinical Teratology? (2.5marks)**

/2.5

**FIVE Principles of Clinical Teratology:**

1. ....
2. ....
3. ....
4. ....
5. ....

## Q5. Genetics and Dysmorphology(12 Marks):

Q5. Marks: /12

### 5A: Down syndrome about (6 Marks):

(A) Enumerate the TWO types of chromosomal abnormalities in Down syndrome?

/1

1. ....
2. ....

(B) What is the expected FREQUENCY of the following problems in Down syndrome?

/1.5

1. Congenital heart disease ( %)
2. Polydactyly ( %)
3. Hypothyroidism ( %)

(C) Mention FOUR complications in Down syndrome:

/2

1. ....
2. ....
3. ....
4. ....

(D) List THREE methods for prenatal diagnosis of Down syndrome in the first trimester:

/1.5

1. ....
2. ....
3. ....

### 5B: Read the following scenario and Answer the following four questions:(6 marks)

(A male with Hemophilia A married a normal female)

(A) What is the type of inheritance of hemophilia A? : .....

/1

(B) What is the chance for their future **SON** to be affected? : ( %)

What is the chance for their future DAUGHTER to be a carrier? ( %)

/1

(C) Mention THREE criteria for this type of inheritance:

/3

1. ....
2. ....
3. ....

(D) Mention TWO examples of diseases with the SAME type of inheritance:

/1

1. ....
2. ....

**Q6. Nephrology (5 Marks):**

**Q6. Marks:**  
.....

**6A: Define hematuria and compare between glomerular and non glomerular causes in urine analysis.**

• **Definition:** ..... /0.5  
.....

• **Glomerular Vs Non-Glomerular hematuria** /2

Item	Glomerular	Non- Glomerular
RBCs shape		
Proteinuria		
RBCs cast		
Granular cast		

**6B: Mention TWO predisposing factors for increased susceptibility to infection in children with nephrotic syndrome:**

- 1. .... /1.5
- 2. ....

**6C: Mention TWO causes of glomerulonephritis in children with normal complement levels.** /2

- 1. ....
- 2. ....

**Q7. Cardiovascular System (12 Marks):**

**Q7. Marks: /12**

**7A: Give reason: (6 marks ,one mark for each question)**

1-Why isolated large VSD is not a cause of heart failure in neonatal period ? /1

.....  
.....  
.....

2-Why in rheumatic fever, chorea and arthritis seldom occur simultaneously while the combination of chorea and carditis may occur? /1

.....  
.....  
.....

3- Why in Hypercyanotic spell in Tetralogy of Fallot patient, IV propranolol is recommended while captopril therapy is completely contraindicated? /1

.....  
.....  
.....

4-Why a small patent ductus arteriosus in an asymptomatic child should be closed? /1

.....

5-Why auscultation of pansystolic murmur but not ejection systolic murmur almost indicates an underlying structural heart disease? /1

.....  
.....

6-Why an elevated or rising titer of ASO antibody is not an essential requirement for the diagnosis of the initial attack of rheumatic fever? /1

.....  
.....

**7B: Mention three TWO clinical and TWO laboratory and or imaging findings suggestive of active rheumatic fever? (4 marks)**

**Clinical :** /2

- 1. ....
- 2. ....

**Laboratory /Imaging:** /2

- 1. ....
- 2. ....

**7C: Define: (2 marks)**

**Innocent murmur:** /1

.....

**Hypertension in asymptomatic child aged 6 year old:** /1

.....

**Q8: Respiratory system (15 Marks):**

**Q8. Marks: /15**

**8A:** Regarding pneumonia in infants and children, mention SIX clinical manifestations that are indicative of SEVERE infection? (3marks)

/3

1. ....
2. ....
3. ....
4. ....
5. ....
6. ....

**8B:** Regarding pneumonia in infants and children, mention FOUR clinical and TWO radiological manifestations that are indicative of bacterial etiology? (4 marks)

**Four clinical criteria:**

/2

1. ....
2. ....
3. ....
4. ....

**Two radiological criteria**

/2

1. ....
2. ....

**8C:** Acute bronchiolitis is a disease of the small airways affecting infants in the first two year of life. Describe the THREE phases of the clinical course of the disease (4 marks):

- **Phase one:** .....  
.....  
.....
- **Phase two:** .....  
.....  
.....  
.....
- **Phase three:** .....

/1

/2

/1

**8D:** list FOUR risk factors associated with severe bronchiolitis and/or complications (4 marks):

/4

1. ....
2. ....
3. ....
4. ....

**Q9: Hematology and Oncology (8 Marks):**



**9A:** A 4 month-old male infant presented with pallor and jaundice dating shortly after birth. He received 3 times blood transfusions over the last 3 months. His father had gall bladder stones for which cholecystectomy was done and his paternal grandfather had splenectomy done long time ago. The CBC shows Hb 8 gm/dL with MCV 80 fL, MCH 28 pg and MCHC 37. Answer the following questions: (4marks)

a) What is the most probable diagnosis of such case? /1

- .....

b) From **the above-mentioned data**, enumerate the 4 clues to support your diagnosis /2

- .....
- .....
- .....
- .....

c) What are the two additional laboratory tests needed to confirm the final diagnosis? /1

- .....
- .....

**9B:** A 2 year-old boy presented with acute purpura and ecchymosis with bleeding gums after few days of upper respiratory tract symptoms. His blood picture shows Hb of 11 gm/dL, white cell count of 6000/cmm and platelet count of 10000/ cmm with mean platelet volume of 11 fl. No pallor, no Hepatosplenomegaly no lymphadenopathy (4 marks)

a) What is the most probable diagnosis of such case? /1

- .....

b) Mention ONE short term and ANOTHER long term complications? /1

- .....
- .....

c) What is the NEXT laboratory tool to arrive at the final diagnosis? /0.5

- .....

d) What are the THREE lines of pharmacological therapy that may be prescribed in this case? /1.5

- .....
- .....
- .....

**Q10. Infections (25 Marks):**

**Q10. Marks:** /

**10A: Compare CSF criteria of bacterial and viral meningitis: (4 marks)**

/4

Parameter	Acute Bacterial meningitis	Viral meningoencephalitis
Protein		
Glucose		
Leukocytes		
Gram stain		

**10B: Rregarding Pertussis in children (6 marks)**

**Clinically when you suspect?**

/2

- .....
- .....

**What are the investigations to confirm clinical suspicion of pertussis?**

/4

- .....
- .....
- .....
- .....

**10C: Enumerate SIX diseases caused by Hemophilus influenza type b (6 marks):**

/6

1. ....
2. ....
3. ....
4. ....
5. ....
6. ....

**10D: Describe the enanthem and exanthem of scarlet fever (4 marks):**

**Enanthem:**

/1.5

- .....
- .....

**Exanthem:**

/2.5

- .....
- .....
- o .....
- o .....
- .....
- .....
- .....

**10E: Regarding Erythema infectiosum; Fifth disease, answer the following questions: (5 marks)**

**The Causative agent:** .....

/1

**The characteristic features of the rash:**

/2

1. ....
2. ....
3. ....
4. ....

**Mention four Complications of the disease :(0.5 mark) each**

/2

1. ....
2. ....
3. ....
4. ....

## Q11. Endocrinology (15 Marks):

Q11. Marks: /

**11A: Mention the clinical and radiological findings of hypothyroidism during the early weeks of life, (7marks)**

/7

1. A- Clinical.....
2. ....
3. ....
4. ....
5. B-  
radiological.....
6. ....
7. ....

**11B: Diabetic Ketoacidosis (8 marks)**

- **Definition:** .....

/1

- **Laboratory diagnosis include: (2.5 marks)**

/2.5

- 1.....
- 2.....
- 3.....
- 4.....
- 5.....

- **During therapy of DKA, what are the warning symptoms and signs suggestive of brain edema? (2.5 marks)**

/2.5

- 1.....
- 2.....
- 3.....
- 4.....
- 5.....

- **What is the immediate action to be taken when brain oedema is suspected? (2 marks)**

- 1.....
- 2.....
- 3.....
- 4.....

**Q12. Pediatric Emergencies (20 Marks):**

Q12. Marks: /

**12A: Define Anion\_Gap, mention 3 cause of wide AG and explain clinical significance (6 marks)**

Definition: (0.5 mark)

/0.5

.....

A) How to calculate anion gap: (0.5 mark)

/0.5

.....

B) Explain clinical usefulness of anion gap: (1.5 marks)

/1.5

.....  
.....  
.....

D) Mention THREE causes of high anion gap metabolic acidosis? (1.5 marks)

/1.5

.....  
.....  
.....

E) Mention TWO causes of normal anion gap metabolic acidosis (2 marks)

/2

.....  
.....

**12B: Hyperkalemia (5 marks)**

A) Give THREE causes of hyperkalemia without increase in total body potassium? (3 marks)

/3

- .....
- .....
- .....

B) What are the FOUR lines of treatment that do not alter total body potassium? (2 marks)

/2

- .....
- .....
- .....
- .....

**12C: Life support (6 marks)**

A) What are the anatomical factors that predispose pediatric airway for obstruction, mention THREE factors: (3 marks)

13

- .....
- .....
- .....

B) Enumerate THREE circumstances in which there is absent or decreased effort of breathing in the setting of potential respiratory failure? (3 mark)

13

- .....
- .....
- .....

**12D: Enumerate THREE causes of obstructive shock (3 marks)**

13

- .....
- .....
- .....

**Q13: Gastrointestinal diseases and Hepatology (6 Marks):**

<b>Q13. Marks:</b> /
----------------------

**13A: List SIX causes of metabolic liver diseases (3 marks)**

13

1. ....
2. ....
3. ....
4. ....
5. ....
6. ....

**13B: Write down the composition of WHO oral rehydration solution,ORS: (3 mark)**

13

1. Glucose: .....
2. Na: .....
3. K: .....
4. Cl: .....
5. Base(citrate): .....
6. Osmolality: .....

**Q14. Neurology (10 Marks):**

**Q14. Marks: /**

**14A: Correct the underlined word or statement (5 marks)**

- 1. Dandy Walker malformation is a cause of primary craniostenosis. /1  
○ .....
- 2. Diagnosis of cerebral palsy depends mainly on radiological finding. /1  
○ .....
- 3. Breath holding spell is considered a type of simple partial seizure. /1  
○ .....
- 4. Spinal muscle atrophy is an autosomal recessive disease affecting the peripheral nerve. /1  
○ .....
- 5. Gillian Barre syndrome is best managed with the use of non steroidal anti-inflammatory drugs. /1  
○ .....

**14B: Flobby infant: (5 marks)**

- **Definition: (1mark)** /1  
.....  
.....
- **Essentials for clinical diagnosis: (2 marks)** /2
  - 1. ....
  - 2. ....
- **Enumerate FOUR central causes of flobby infant : (2 marks)** /2
  - 1. ....
  - 2. ....
  - 3. ....
  - 4. ....

*End of Exam ---- Good Luck*