Case 1

1. Write 3 indications and 3 contraindications of this specimen?

2. Write the complications of its use?

Key

1. Indications:
   - Gastric lavage
   - Nasogastric tube feeding
   - Decompression of upper GI tract (e.g. in the intestinal obstruction)

Contra-indications:
   - Unstable airway
   - Erosive poisoning
   - Kerosene oil poisoning

2. Complications:
   - Hemorrhage
   - Introduction of infection
   - Perforation
   - Aspiration
Case 2

1. Identify the specimen? 1
2. What are the indications for the use of this specimen? 2
3. What are the risk factors associated with this specimen? 2

Key

1. IV branula
2. Indications:
   - Vascular access in emergency and non-emergency situation
   - Administration of fluids and electrolytes
   - Administrations of IV medications
   - Administrations of blood and blood products
   - Blood sampling
3. Risk Factors:
   - Infections
   - Hematomas
   - Extravasations
   - Venous thrombosis
   - Embolization of air
Case 3

1. Identify the instrument being used in the photograph?  
2. What are the indications of its use?  
3. What are the contra-indications of its use?  

Key

1. Lumber puncture needle  
2. Indications:  
   - CNS infections (bacterial, viral, tuberculous)  
   - Neuro-degenerative brain disease  
   - Pseudotumor cerebri  
3. Contra-indications:  
   - Raised intracranial pressure  
   - Intracranial mass lesion  
   - Spinal cord mass  
   - Local skin infection  
   - Bleeding diathesis
Case 4

1. Identify the procedure being demonstrated in the photograph?  
   Peritoneal tap (Paracentesis)

2. What are the indications of this procedure?  
   - Diagnostic evaluation of ascetic fluid
   - Therapeutic removal of ascetic fluid in respiratory comprise

3. What are the contra-indications of this procedure?  
   - Infection of the abdominal wall
   - Hemodynamically unstable patient
   - Intestinal perforation
   - Bleeding diathesis

Key
Case 5

1. Identify the specimen? 1
2. What are the indications of its use? 2
3. What are the contra-indications of its use? 2

Key

1. Bone marrow aspiration needle
2. Indications:
   - Diagnostic evaluation if pancytopenia / aplastic anemia
   - Evaluation in acute and chronic leukemia
   - Lymphoma
   - Storage disease
   - Myeloproliferative disease
3. Contra-indications:
   - Risk of bleeding
   - Risk of infection / Osteomyelitis
Case 6

1. Identify the procedure being shown in this photograph? 1.0
2. Enumerate 3 basic parameters in evaluation during neonatal resuscitation? 1.5
3. What is APGAR score? 2.5

Key

1. Bag and mask ventilation
2. Basic parameters:
   - Respiration
   - Heart rate
   - Color
3. APGAR score:

<table>
<thead>
<tr>
<th>APGAR</th>
<th>0</th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Central &amp; peripheral cyanosis</td>
<td>Peripheral cyanosis</td>
<td>Pink</td>
</tr>
<tr>
<td>Pulse</td>
<td>&lt; 60</td>
<td>60-100</td>
<td>&gt; 100</td>
</tr>
<tr>
<td>Grimace</td>
<td>No grimace</td>
<td>Some</td>
<td>Full cry</td>
</tr>
<tr>
<td>Activity</td>
<td>Limp</td>
<td>Some activity</td>
<td>Active</td>
</tr>
<tr>
<td>Respiration</td>
<td>No respiration</td>
<td>Gasping</td>
<td>Normal</td>
</tr>
</tbody>
</table>
Case 7

1. Identify the instrument being used in the photograph? 1
2. What are the indications for use of this instrument? 1
3. What complications may result from use of this instrument? 3

Key

1. Oropharyngeal airway
2. Indications:
   - Maintenance of airway in unconscious patient
3. Complications:
   - If large airway is used, it may traumatize the laryngeal structure
   - If large airway is used, it may lead to vomiting and aspiration
   - If airway is inserted improperly, it may push tongue posteriorly and can lead to obstruction
   - Introduction of infections
Case 8

1. What step of resuscitation is being performed in this photograph?  
2. What is the indication for doing this step?  
3. What complications may result if this step is done vigorously?

Key

1. Cardiac compression along with bag and mask ventilation
2. When heart rate is below 60/min in spite of bag and mask ventilation, chest compression is started
3. Complication:
   - Chest contusions and abrasions
   - Rib fracture
   - Pericardial hematoma
   - Pulmonary hemorrhage
Case 9

1. Identify the procedure being shown in the photograph?
2. What are 2 indications for this procedure?
3. What are the complications of this procedure?

Key

1. Umbilical vein cannulation
2. Indications:
   - For exchange transfusion
   - Emergency vascular access for fluid and medications when IV cannot be maintained
3. Complications:
   - Hemorrhage from displacement of catheter
   - Risk of infection (portal vein thrombophlebitis, ascending cholangitis, septicemia)
   - Air embolism
   - Cardiac arrhythmias if catheter mal positioned in the heart
   - Later portal hypertension
Case 10

1. Identify the device being used by the patient in the photograph?  
2. Name the commonest disease where this device is advised?  
3. Write the steps of management of this disease when presenting as acute attack?

---

**Key**

1. Spacer device with inhaler (MDI)
2. Bronchial asthma
3. Management:
   - O₂ inhalation
   - Salbutamol nebulization
   - IV Aminophylline infusion
   - IV Hydrocortisone
   - Adequate hydration
   - Antibiotics if infection suspected
   - Ventilator support if needed
1. What examination is being shown in the photograph?
2. Write 6 common causes of hypertension in children?
3. Write 4 complications of hypertension in children?

**Key**

1. Blood pressure measurement
2. Causes:
   - Acute glomerulonephritis
   - Chronic glomerulonephritis
   - Vesicoureteral reflex nephropathy
   - Renal artery stenosis
   - Coarctation of aorta
   - Cushing’s syndrome
   - Congenital adrenal hyperplasia
3. Complications:
   - Hypertensive encephalopathy
   - Hypertensive cardiac failure
   - Cerebro-vascular accident
   - Hypertensive retinopathy
Case 12
(CNS Lab Data)

CSF findings of a 12 days old baby boy presented with fever and multi-focal fits for 1 day are:
Protein 180 mg/dl, glucose 20 mg/dl, TLC 500, DLC P 80%, L 20%, Gram staining –ve and culture –ve.

1. What is the most likely diagnosis? 0.5
2. Enumerate steps of treatment? 3.0
3. Write 6 complications of this disease? 1.5

Key

1. Pyomeningitis
2.
   a. General care
   b. Specific care
      ▪ Antibiotics
      ▪ Steroids
   c. Monitor for complications and treatment
   d. Discharge and follow up
3. Complications:
   ▪ Hydronephrosis
   ▪ SIADH
   ▪ Subdural empyema
   ▪ Subdural effusion
   ▪ Mental retardation
   ▪ Cerebral palsy
   ▪ Blindness
   ▪ Deafness
Case 13
(Neonatology)

A 10 hours old premature baby born at 30 weeks is brought to emergency room. His radiograph is as under:

1. Give 2 positive findings in this radiograph and what is the diagnosis? 2
2. What other investigations are needed to reach final diagnosis? 2
3. What specific treatment this condition needs? 1

Key

1. Findings:
   - Ground glass appearance
   - Cardiac shadow not distinguishable
   
   Idiopathic Respiratory Distress Syndrome (IRDS)

2. Investigations:
   - ABG
   - Sepsis screen (CBC, CRP, Blood culture)

3. Specific Treatment:
   - Ventilator support
   - Surfactant therapy
Case 14
(Neonatology)

A 7 days old premature baby admitted in NICU taking formula feeding became lethargic for the last 2 days, passed thrice mucoid stool along with blood yesterday. Now for last 3 hours, having abdominal distension. His x-ray abdomen was advised which is as under:

1. Give positive finding in the radiograph?  1.0
2. Give 6 risk factors of this condition?  1.5
3. Write down the steps of management of this condition?  2.5

Key

1. Free air in the peritoneum (Pneumoperitoneum)
2. Risk factors:
   ▪ Pre-maturity
   ▪ Asphyxia
   ▪ Enteral feeding
   ▪ Hyperosmolar formula feeding
   ▪ Polycythemia
   ▪ Exchange transfusion

3. Management:
   ▪ Maintain ABC protocol
   ▪ NPO (nil per oral)
   ▪ Gastric drainage by passing NG tube
   ▪ Maintenance of fluids and electrolytes
   ▪ Systemic antibiotics (Ampicillin + Gentamycin + Metronidazole)
   ▪ Monitor IOP
   ▪ Monitor abdominal girth
   ▪ Surgical intervention
Case 15

A previously healthy 4 years old afebrile, conscious child, developed gum bleeding and multiple bruises on body for last 4-5 days. There is no hepato-splenomegaly or lymphadenopathy.

1. What is the most likely diagnosis?
2. What do you expect in following diagnosis?

<table>
<thead>
<tr>
<th>Platelet count</th>
<th>PT</th>
<th>aPTT</th>
</tr>
</thead>
<tbody>
<tr>
<td>low</td>
<td>normal</td>
<td>normal</td>
</tr>
</tbody>
</table>

Key

1. ITP (idiopathic thrombocytopenic purpura)
2. Values will be:
Case 16
(Neonatology)

1. What is the diagnosis in this one day old baby who was unable to move his left arm during demonstration for Moro’s reflex?  
   1
2. Which root and cord is damaged in this case?  
   1
3. Enumerate 6 other examples of birth trauma?  
   3

Key

1. Left Erb’s palsy
2. 
   - Root involved are C5 and C6
   - Upper cord of brachial plexus
3. Examples:
   - Cephalhematoma
   - Sub-aponeurotic bleed
   - Klumpke’s paralysis
   - Facial nerve paralysis
   - Fracture of skull
   - Sub-conjunctival and retinal hemorrhage
   - Intra-cranial and intraventricular hemorrhage
Case 17
(Neonatology)

1. Identify the positive findings in this photograph? 1
2. Write 3 complications and 3 causes of this condition? 3
3. What is the treatment of this condition? 1

Key

1. Cephalhematoma
2.
   a. Complications:
      ▪ Anemia
      ▪ Hyperbilirubinemia
      ▪ Kernicterus
   b. Causes:
      ▪ Trauma
      ▪ Coagulation disorder
      ▪ Platelet disorder
3. Treatment:
   ▪ Conservative / Observation
   ▪ Counselling to parents
Case 18  
(Neonatology)

The neonate in this photograph was born to a diabetic mother:

1. Describe two positive findings in the photograph?  
   Answer: Large for gestational age, Plump plethoric faces

2. Enumerate 8 complications of this disease?  
   Answer: LGA / SGA, Birth asphyxia, Birth trauma, Hypoglycemia, Hypocalcemia / hypomagnesemia, Respiratory distress syndrome, Hypertrophic Cardiomyopathy, Hyperbilirubinemia, Polycythemia, Congenital malformation

3. Give steps of management of this disease?  
   Answer: Careful screening for any evidence of birth asphyxia and birth trauma, Careful screening for any congenital malformation, Prevention and treatment of hypoglycemia and hypocalcemia, Prevention and treatment of any other complication

Key
Case 19
(Neonatology)

1. Identify the instrument?
2. Write 3 indications for using this instrument?
3. Describe its 4 complications?

Key

1. Endo-tracheal tube (ET tube)
2. Indications:
   - Artificial ventilation
   - Tracheal lavage
   - Administration of surfactant
3. Complications:
   - Introduction of infection
   - Hemorrhage
   - Rupture and air leak
   - Laryngeal stenosis
Case 20
(Clinical Scenario)

A 8 months old boy weighting 7.5 kg presented in emergency with gasping respiration, rapid thready pulses and poor peripheral perfusion.

Write down the steps of management to stabilize the child?

Key

Steps of Management:

- Airway clearing, looking for foreign body (FB) in oral cavity, clear mucous membrane
- Breathing effort and effectiveness (gasping ventilation so bag and mask ventilation)
- Circulatory stabilization if heart rate is < 60/min, start cardiac massage at rate of 1:3, continue for 3 minutes uninterrupted.
A 3 years old circumsized boy presented with 3 episodes of urinary tract infection in past one year:

1. What 3 investigations you will carry out in this child?  
2. Give two principles of treatment?

Key

1. Investigations:  
   - Urine complete  
   - Urine culture  
   - MCUG (Micturating Cystourethrogram)  
   - Abdominal ultrasound  
   - DMSA scan (Dimercaptosuccinic Acid scan)  
   - Renal functions test

2. Two principles of treatment:  
   - Treatment of acute episode with antibiotics  
   - prophylaxis with antibiotics (septran, nalidixic acid, amoxicillin)
Case 22
(Clinical Scenario)

A 1 year old boy weighing 6 kg presented with history of fever for last 20 days, fits for last 3 days and unconsciousness for last 1 day. He is not vaccinated and his grand mother has chronic cough.

1. What would be the CSF picture?
2. What is the specific treatment of TBM?

Key

1. CSF:
   - Appearance hazy
   - Cells 100-500/mm³, increases lymphocytes
   - Sugar < 40 mg/dl
   - Protein 100-5000 mg/dl
   - ZN staining for AFB Positive

   (Acid Fast Bacilli; AFB)

2. ATT 4 drugs (INH, Rifampicin, PZA, streptomycin) and steroids (steroids are started 1 week before starting antibiotics)
Case 23 (Clinical Scenario)

A 5 months old infant presents in basic health unit (BHU) with history of cough and difficulty in breathing for 2 days. On examination, his heart rate 110/min, RR 58/min and temperature 100°F. He has chest indrawing and audible wheeze.

1. Where do you classify his ailment according to WHO ARI management programme?
2. How would you treat him?

Key

1. Severe pneumonia
2. Treatment:
   - Refer urgently to hospital
   - Give first dose of antibiotic (benzyl penicillin)
   - Give first dose of antipyretic (paracetamol)
   - Give first dose of salbutamol
   - Give first dose of antimalarial in malaria prevalent area
Case 24
(Infectious Diseases)

1. What are findings in the photograph? 1.0
2. Give three differential diagnosis? 1.5
3. Give the steps of treatment of most common chronic infectious disease responsible for these findings? 2.5

Key

1. Findings:
   - Gross ascites
   - Gross emaciation
2. Differentials:
   - Abdominal tuberculosis
   - Chronic liver disease
   - Malignancy (lymphoma)
3. Treatment:
   - Fluid and salt restriction
   - Nutritional rehabilitation
   - Chemotherapy for rehabilitation