PEDIATRICS OSCE

Stagiaire
NMC-MCM
2016-2017
Part A
OSCE 1  Match the following

A. PROTECTIVE FACTORS IN BREAST MILK
1. Bile salt stimulated Lipase   A. Inhibits E.coli
2. Par amino Benzoic acid       B. CNS growth factor
3. Bifidus Factor               C. Kills amoeba & giardia
4. Lactoferrin                  D. Protects against malaria
5. Human Beta Casomorphin       E. Promotes Lactobacilli

B. TRACE ELEMENT DEFICIENCY
1. Copper                      A. Hyperglycemia
2. Selenium                   B. Central Scotoma
3. Chromium                   C. Cardiomyopathy
4. Molybdenum                 D. Reddening of Hair
5. Manganese                 E. Refractory Anemia
OSCE 2

6 Hours after ingesting 10 tablets from his grandfather’s medicine box, a 4 yr old child is brought to ER with nausea vomiting and restlessness. O/E, His vitals; RR-50/min ,HR-60/min ,BP-70/40mmhg. Auscultation reveals Bilateral wheeze. ECG shows Sinus Bradycardia. CBG done at ER is 40 mg/dl.

1. What is the likely poison?
2. Mechanism of toxicity?
3. Steps in management?
4. Drug of choice?
5. Indication for ECMO?
OSCE-3 TRUE OR FALSE

Regarding Rett disorder,
1. X linked recessive disorder - True or False
2. Affects predominantly girls - True or False
3. Microcephaly noted at birth - True or false
4. EEG normal in most children - True or false
5. Hand wringing movements are typical - True or false.
OSCE-4

**Match the Organism with the condition associated:**

1. Melioidosis  
2. Pontiac fever  
3. Oroya fever  
4. Swimming pool granuloma  
5. Bornholm disease  
6. Ecthyma gangrenosum  
7. Condyloma lata  
8. Malt workers lung  
9. SARS  
10. Kaposi sarcoma

<table>
<thead>
<tr>
<th>Organism</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. HHV-8</td>
<td>1. Melioidosis</td>
</tr>
<tr>
<td>B. Coxsackie virus</td>
<td>2. Pontiac fever</td>
</tr>
<tr>
<td>C. Corona virus</td>
<td>3. Oroya fever</td>
</tr>
<tr>
<td>D. Bartonella bacilliformis</td>
<td>4. Swimming pool granuloma</td>
</tr>
<tr>
<td>E. Treponema pallidium</td>
<td>5. Bornholm disease</td>
</tr>
<tr>
<td>F. Aspergillus fumigatus</td>
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</tr>
<tr>
<td>G. Mycobacterium marinux</td>
<td>7. Condyloma lata</td>
</tr>
<tr>
<td>H. Psedomonas aeruginosa</td>
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</tr>
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</tr>
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<td>J. Legionella micdadei</td>
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</tbody>
</table>
OSCE-5

Meningococcal conjugate vaccine (MCV)
1. Dosage and administration
2. Composition of vaccine
3. Contra indication for vaccine
4. IAP Recommendations for use: (any 2)
5. Which vaccine cannot be co-administered with MCV?
MATCH THE FOLLOWING:

1. Ujjawala services  A. Safe Motherhood
2. The Sharda act       B. NRHM
3. Kishori Shakthi Yojana C. Child trafficking
4. ASHA prevention     D. Child marriage
5. Vandemataram Scheme E. Adolescent girl health.
OSCE 7

MYCOPHENOLATE MOFETIL

1. Mechanism of Action
2. Indications (ANY 4)
3. Dose
4. Serious Adverse Effects
5. Drug Interactions (ANY 2)
OSCE 8

Identify the colour coding & Type of container used for disposing these Health Care Wastes:

1. Disinfectants
2. IV sets
3. Syringes
4. Soiled Linen
5. Discarded Medicine
6. Biopsy Specimen
7. Used Gloves
8. Packaging Material
9. Placenta
10. Broken Glass
Obtain history from a mother who has brought her 6 yrs old child with history of unprovoked seizures.
OSCE 10

X ray pictures of a 11 year old boy presenting with recurrent long bone fractures
OSCE 10

1. Identify the condition?
2. Mode of inheritance?
3. Underlying pathology?
4. Mention 1 differential diagnosis:
5. Other clinical Features in this condition? (Any 4)
OSCE 11

1. What is the diagnosis? (2)
2. What is the mode of inheritance? (2)
3. What are the 4 stages? (4)
4. Name 2 associated defects. (2)
A 7 month old boy presents with pallor, tri-phalangeal thumbs and mild hepato-splenomegaly.

- Hb- 7g%, MCV- 100 fl, Reti.count- < 1%, P.smear- normocytic to macrocytic RBCS, normal WBCs and platelets.
- Vitamin B12 and folate levels are normal.
- Hb electrophoresis- raised HbF.
OSCE 12

1. What is the diagnosis?
2. What is the underlying defect?
3. What is the closest Differential diagnosis?
4. Give two points to differentiate them.
5. Name at least one malignancy it can predispose to.
Regarding Hyponatremia,

1. What is the dreaded complication of overzealous correction of hyponatremia?

2. This complication is more common during correction of chronic hyponatremia - True/False.

3. What is the advisable rate of correction of hyponatremia to prevent this complication?

4. When do the clinical features develop?

5. What are the neurological features seen?
OSCE 14

1. What are the findings in the E.C.G?
2. What is the diagnosis?
3. When should the E.C.G be done to identify these findings?
4. Which is the drug of choice for this condition?
5. Which drugs are contra-indicated?
A new rapid test was compared with the gold standard of blood culture for diagnosing enteric fever. Of total 500 fever cases, Culture was positive in 400 children. Rapid test was positive in 300 children and both culture and rapid test were positive in 260 children.

Calculate the following for the rapid test:

a) Sensitivity
b) Specificity
c) Positive predictive value
d) Negative predictive value
e) Likelihood ratio positive
f) Likelihood ratio negative
OSCE 16

What is the developmental age at which the following milestones are achieved?

1) Can tie shoelaces
   Differentiate between morning and afternoon
2) Can button up clothes
   Say which line is longer of two lines
3) Build tower of nine
   Unbutton shirt
4) Picks up ball without falling
   Uses ‘I’, ‘Me’ and ‘You’.
5) Kneels without support
   Likes to take off shoes
OSCE 17

1. What is the finding?
2. What is the diagnosis?
3. What causes this finding on the MRI?
4. What is the mode of inheritance?
5. Give two clinical features of this condition.
A 11 year old child meets with a RTA and has injury to the cervical region. Vitals are as follows:

- Airway partially obstructed with snoring noises, RR-20/min, paradoxical breathing, mild retractions, SpO2-94%
- HR-80/min, Peripheral pulses are feeble, cold extremities, BP-86/34, cold peripheries
- GCS-13/15
- PERL

1. What is the physiological status?(1)
2. What is the probable cause of shock?(2)
3. What are the points in favor of the diagnosis?(2)
4. Initial steps in management?(5)
OSCE 19

14 years old girl, history of recurrent muscle cramps,
ABG- PH 7.6, PO2 99, HCO3 36, PCO2 47, SaO2 98.
1. Interpret the ABG
2. Is it compensated? What is the formula for compensation?
3. What is the probable diagnosis?
4. What is the basic defect?
5. Mention 3 associated metabolic abnormalities in this condition?
OSCE 20

HIV INFECTION IN NEW BORN

1. Mother has HIV infection and if baby is PCR positive within 48 hrs. What does it imply?

2. Another baby born of HIV +ve mother tests negative for PCR at 48 hrs but PCR turned positive within 7 – 90 days. What does it imply?

3. How early can P24 antigen test be done?

4. When do you label a newborn as HIV infected?

5. After what age is HIV ELISA considered the best test for diagnosis and what is its sensitivity and specificity.
OSCE ANSWERS
# OSCE 1 – Matched Answers

## A. PROTECTIVE FACTORS IN BREAST MILK

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## B. TRACE ELEMENT DEFICIENCY

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<td>5.</td>
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</table>
OSCE 2 ANSWER

1. Beta Blocker poisoning.
2. Decreased chronotropy, Decreased Inotropy
3. Orogastric lavage within 1hr of injection
   Activated charcoal &
   Whole bowel irrigation
4. Glucagon. (Other useful agents include Atropine, high dose insulin & vasopressors)
5. Refractory Hypotension.
Regarding Rett disorder,
1. X linked recessive disorder - False
2. Affects predominantly girls - True
3. Microcephaly noted at birth - False
4. EEG normal in most children - False
5. Hand wringing movements are typical - True
### OSCE 4 ANSWER

Match the Organism with the condition associated:

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OSCE-5 ANSWER

1. 0.5ml, Intramuscular
   Individuals 2yr-55yrs of age - Single dose
2. Quadrivalent A,C,Y and W-135 polysaccharide 4mcg each conjugated to 48 mcg of diphtheria toxoid
3. Anphylaxis after previous dose of MCV
   Guillian Barre Syndrome
4. Disease outbreaks , Immuno compromised children, Lab/Health care workers, Saudi pilgrims, Students
5. Pneumococcal conjugate vaccine (Prevenaar)
OSCE 6 ANSWER

MATCH THE FOLLOWING:

1. Ujjawala  C. Child Trafficking
2. The Sharda act  D. Child Marriage Prevention
3. Kishori Shakthi Yojana  E. Adolescent Girl Health
4. ASHA  B. NRHM
5. Vandemataram Scheme  A. Safe Motherhood Services
1. Mechanism of Action – It inhibits inosine monophosphate dehydrogenase, that is important for DNA formation
2. Indications: Nephrotic Syndrome, SLE, Rheumatoid Arthritis, Inflammatory Bowel disease – Crohns Disease, ITP, Myasthenia grevis, Polymyositis, Atopic dermatitis, Dermatomyositis, Auto immune Hepatitis, Prophylaxis for Renal / Liver transplant Graft rejection
3. Dose : 40 to50 mg/kg/day or 400 mg/m² twice daily
4. Serious Adverse Effects :
a) Blood Dyscrasias – Leukopenia / Pure Redcell Aplasia
b) GI Bleed / Perforation / Ulcers
5. Drug Interactions : Azathioprine, Cholestyramine, Norfloxacin, Metronidazole, Rifampicin, Cyclosporin, Hormonal Contraceptives, Antacids, Cotrimoxazole, Acyclovir/Gancyclovir/Valacyclovir
OSCE 8 ANSWER

Identify the colour coding & Type of container used for disposing these Health Care Wastes:

1. Disinfectants – Black plastic bag
2. IV sets – Red plastic bag
3. Syringes – Blue Puncture proof container
5. Discarded Medicine – Black plastic bag
6. Biopsy Specimen – Yellow plastic Bag
7. Used Gloves – Red plastic bag
8. Packaging Material – Black plastic bag
9. Placenta – Yellow plastic bag
10. Broken Glass- Blue puncture proof proof container
OSCE 9 ANSWER

Checklist:
1) Introduces and establishes rapport.
2) Asks her to act out or re-create a seizure
3) Asks for Aura and automatism
4) Asks about headache and vomiting
5) Elicits h/o failure to thrive
6) Asks for details of medications used that may precipitate seizure
7) Asks for details of anticonvulsant therapy
8) Asks for compliance
9) Asks for family history
10) Asks for developmental history
11) Asks for birth and neonatal problem
12) Asks for the time of occurrence of seizures
13) Asks for frequency
14) Asks for precipitating factor like from fever.
1. Pyknodysostosis
2. Autosomal recessive
3. Lysosomal disorder due to genetic deficiency of Cathepsin K, which is important for normal osteoclast function
4. Osteopetrosis
5. Short stature, Delayed closure of cranial sutures, fronto-parietal bossing, short broad hands with hypoplasia of nails, nasal beaking, proptosis, obtuse mandibular gonial angle.
OSCE 11 ANSWER

1. Incontinentia pigmenti/ Bloch-Sulzberger disease.
2. X-Linked dominant
3. A) Vesicular streaks B) Hyperkeratotic plaques
   C) Pigmentary stage D) Hypopigmentation
4. Associated Defects:
   i. Dental: Delayed dentition, conical teeth, impaction
   ii. Skin: Alopecia, Nail dystrophy,
   iii. CNS: Dev.delay, microcephaly, spasticity, seizures
   iv. Ocular: Microphthalmos, optic atrophy, strabismus, cataracts, retrolenticular masses, neo-vascularisation
   v. Skeletal defects.
OSCE 12 ANSWER

1. Diamond Blackfan syndrome.
2. Decrease in number and function of erythroid precursors with probable insensitivity to EPO
3. TEC (Transient Erythroblastopenia of childhood)
4. Age of onset (TEC usually beyond 6 months), MCV (normocytic in TEC), h/o preceding viral infection (present in TEC), HbF & ADA (Both increased in DBA)
5. AML, MDS, Osteosarcomas
OSCE 13 ANSWER

• Central Pontine Myelinolysis / Osmotic demyelination syndrome.
  • True
  • Not > 12 meq/L/day.
  • At least 2-6 days after the rapid correction of hyponatremia
  • Spastic quadri/paraparesis, Locked –in syndrome, obtundation, seizures, dysarthria.
1. Short PR interval, presence of Delta wave.
2. Wolf- Parkinson White syndrome
3. During resting stage when there is no tachycardia.
4. Propanolol
5. Digoxin, CCBs.
## OSCE 15 ANSWER

<table>
<thead>
<tr>
<th></th>
<th>Culture positive</th>
<th>Culture negative</th>
</tr>
</thead>
</table>
| Rapid test Positive | 260  
(a)            | 40  
(b)            | 300  
(a+b)- TEST positive |
| Rapid test negative | 140  
(c)          | 60  
(d)            | 200  
(c+d)- TEST negative |
| Total           | 400- DISEASE positive | 100- DISEASE negative | 500- TOTAL |

**SENSITIVITY** - \( \frac{a}{a+c} = \frac{260}{400} = 65\% \)

**SPECIFICITY** – \( \frac{d}{b+d} = \frac{60}{100} = 60\% \)

**POSITIVE PREDICTIVE VALUE** - \( \frac{a}{a+b} = \frac{260}{300}= 87\% \)

**NEGATIVE PREDICTIVE VALUE** – \( \frac{d}{c+d} = \frac{60}{200} = 30\% \)

**LIKELIHOOD RATIO POSITIVE** = Sensitivity/ 1- Specificity = \( \frac{0.65}{0.4} = 1.625 \)

**LIKELIHOOD RATIO NEGATIVE** = 1- Sensitivity/ Specificity = \( \frac{0.35}{0.6} = 0.58 \)
<table>
<thead>
<tr>
<th>Can tie shoelaces</th>
<th>5 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Differentiate between morning &amp; afternoon</td>
<td></td>
</tr>
<tr>
<td>Can button up clothes</td>
<td>4 years</td>
</tr>
<tr>
<td>Say which line is longer of two lines</td>
<td></td>
</tr>
<tr>
<td>Build tower of nine</td>
<td>3 years</td>
</tr>
<tr>
<td>Unbutton shirt</td>
<td></td>
</tr>
<tr>
<td>Picks up ball without falling</td>
<td>2 years</td>
</tr>
<tr>
<td>Uses ‘I’, ‘Me’ and ‘You’.</td>
<td></td>
</tr>
<tr>
<td>Kneels without support</td>
<td>15 months</td>
</tr>
<tr>
<td>Likes to take off shoes</td>
<td></td>
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</tbody>
</table>
OSCE 17 ANSWER

1. Molar tooth sign
2. Joubert’s syndrome
3. Absence of decussation of superior cerebellar peduncles
4. Autosomal recessive
5. Ataxia, irregular respirations, hypotonia, abnormal eye movements, retinitis pigmentosa, polydactyly, nephronophthisis.

CLASSIFIED UNDER CILIOPATHIES
OSCE 17 ANSWER

Joubert’s syndrome

Normal Brain at Midbrain level
OSCE 18 ANSWER

1) Airway Obstructed/ Respiratory distress/ Hypotensive Shock/ ALOC

2) Neurogenic shock

3) Normal heart rate, paradoxical breathing (diaphragmatic breathing), hypotensive shock and wide pulse pressure.

4) Initial steps in management:
   a) Stabilise airway by jaw-thrust manouvre, C-spine immobilisation.
   b) High flow O2 by NRBM
   c) Trendelenberg position
   d) Isotonic fluid NS 20ml/kg boluses as rapidly as you can upto 3 boluses /till perfusion improves & Ionotropes if fluid refractory.
   e) Look for and evaluate other life-threatening conditions like systemic bleeding, pneumothorax.
OSCE 19 ANSWER

1. Metabolic Alkalosis.
2. Compensated. $\text{PCO}_2$ increases by 7 for every 10 mm increase in $\text{HCO}_3$.
3. Gitelman syndrome
4. Defect in sodium chloride co transporter in DCT.
5. Hypokalemia, hypomagnesemia & hypocalkciuria.
1. It implies in utero infection and rapidly progressive disease
2. It implies postnatal transmission and slowly progressive disease
3. After 1 month of age (as false positive rates are higher if done before)
4. If two positive virologic tests (PCR / culture P24 antigen) are obtained from different blood samples.
5. > 18 months of age – it is almost 100 % specificity sensitive.
Part B
A 2 yr old child presents to emergency department with severe pallor. Take the history of the child from mother.
• Introduces himself and tries to make the mother comfortable  0.5 marks
• Asks onset sudden or gradual    1 mark
• History of bleeding or bluish spots  1 mark
• History of associated symptoms: fever, failure to thrive  1 mark
• Recurrent blood transfusions  1 mark
• History of associated jaundice  1 mark
• History of worm infestation 0.5 mark
• Birth history  0.5 mark
• Community and religion and history of consanguinity  1 mark
• Dietary history  0.5 mark
• Family history  0.5 mark
• Drug history  1 mark
• Thanks  0.5 mark
• EXAMINATION OF B.P IN A 10 YEAR OLD?
• Rapport with patient and Bystander
• Choice of cuff size
• Positioning of the patient
• Site of tubing in relation to artery is correct
• Initial palpation, then auscultation method
• Rate of deflation is correct
• Reconfirm reading/ ask for BP chart
• To say if reading is normal or otherwise
• Thanking patient and bystander
• Administer MMR Vaccine to this 17 month old child who is otherwise normal?

<table>
<thead>
<tr>
<th>Activity</th>
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<tbody>
<tr>
<td>Introduces.</td>
<td>½</td>
</tr>
<tr>
<td>Explain to parents about vaccine / cost / side effect</td>
<td>1</td>
</tr>
<tr>
<td>Asks regarding any allergy in child</td>
<td>½</td>
</tr>
<tr>
<td>Wash Hands</td>
<td>½</td>
</tr>
<tr>
<td>Take 2 ml syringe and needle to withdraw diluent and Mix it with the lyophilised Powder</td>
<td>½</td>
</tr>
<tr>
<td>Changes the needle</td>
<td>½</td>
</tr>
<tr>
<td>Identify the site. Anterolat Thigh middle 1/3</td>
<td>1</td>
</tr>
<tr>
<td>Clean the site without spirit</td>
<td>½</td>
</tr>
<tr>
<td>Correct direction (at 45 degree angle)</td>
<td>½</td>
</tr>
<tr>
<td>Withdraw and press at the Inj Site</td>
<td>½</td>
</tr>
<tr>
<td>Post procedure advise to mother</td>
<td>½</td>
</tr>
<tr>
<td>Instructions to wait 30 min and inform on case of problem</td>
<td>½</td>
</tr>
<tr>
<td>When to come for the next dose, Proper Documentation</td>
<td>1</td>
</tr>
<tr>
<td>BIOWASTE DISPOSAL</td>
<td>1</td>
</tr>
<tr>
<td>Thanks the Mother</td>
<td>½</td>
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**TOTAL** 10
• 18 month old boy presented with fever with rash 8 days
• Take the appropriate history
• Introduction and rapport with parents 1
• Onset – sudden/ insidious 0.5
• Timing and pattern of fever, pattern and distribution of rash 2
• h/o associated symptoms-joint pain swelling, conjunctivitis 1
• h/o of travel, mosquito bite, animal exposure, season of the year 2
• h/o medications, lab testing1
• Family history1
• Immunization-measles, MMR 1
• thanking parents 0.5
• Do the musculoskeletal examination of this 8 year old boy

Introduction rapport, permission for examination
INSPECTION-observe child sit, stand, walk looks and reports obvious abnormalities in gait, muscle
PALPATION-swelling tenderness deformities ,abn curvatures in spine
RANGE OF MOVTS-IN major joints of UL AND LL
SPINE- INSP,PALP of spine, forward bending(touching toes without bending knees)assess flexion extension ,lateral flexion,rotation
Reporting impression to examine
Thanking child and parents
29 weeks male 1.1kg delivered just now, developed grunting
Counsel about the immediate treatment plan hospital stay and future prognosis
• Introduces, asks language, establishes rapport with parents
• Importance of early CPAP, and surfactant replacement therapy, need for mechanical ventilation
• Frequent blood gases, x-rays and relevant blood testing and cultures
• Monitor for expected complications-air leaks pulmonary haemorrhage, apnea, septicemia
• Need for long hospital stay till child accepts orally tolerates, euthermic, weighs at least 1.5kg, discharge check with screen for cong anomalies, rop, hearing
• Prognosis-prolonged oxygen requirement (BPD), ROP, neurodevelopmental impairment
• Thanks, asks for doubts
• Check weight length/height head circumference of the new born
• Discuss cord and eye care with the mother
• Introduction and rapport
• Take permission for examination, washes hands
• Weight-removes cloths adjusts 0, removes parallax, reports wt to examiner
• Length-head at 0 movable end at feet, reports L to examiner
• HC-uses nonstretchable tape, covers areas of max protuberance of occiput and point just above glabella, reports to examiner
• Cord care-clean stump with soap and water, allow to dry
• Eye care-wipe eyes with sterile moist cotton, no routine topical antibiotics
• Thanking mother
• Demonstrate liver biopsy procedure with given material?
• Takes consent
• Asks for pre procedure work up-CBC, coagulation profile, LFTS
• Position, painting and draping the area
• Administer local anesthesia
• Checks liver biopsy needle, uses correct technique, checks movement of needle with respiration after entering in liver
• Sends piece of biopsy in formalin bulb
• Applies benzoin, monitors abdominal girth post procedure
• Dispose in BMW
• Assess the developmental age of the child?

• Introduction and rapport with child

• DOLL-asks to tell the parts

• Paper-good enough draw a man test, shows number of body parts drawn by the child

• Crayons, pencils- scribbles, copies circle, rectangle, triangle, hexagon

• Cubes-makes tower of 6, 9, 12, makes bridge

• Tells developmental age to examiner and says thanks to child/parent
• Introduction and rapport with child [1]
• DOLL-asks to tell the parts [1]
• Paper-good enough draw a man test, shows number of body parts drawn by the child[ 2]
• Crayons, pencils- scribbles, copies circle, rectangle, triangle, hexagon [2]
• Cubes-makes tower of 6,9,12,makes bridge[ 2]
• Tells developmental age to examiner and says thanks to child/parent [2]
A 11 yr old male child is admitted with sudden change of behavior, slurring of speech, ataxia and dystonia. On investigations, he found to have anemia with renal tubular acidosis. His ophthalmic examination was done and shown in fig. (1x5=5)

Describe the findings?

What is the most possible diagnosis?

What is the pattern of inheritance for it?

What are the most specific investigations?

What is the complete treatment in this case?
- Slit lamp examination showing brown discoloration at outer margin of cornea
- Wilson disease with lenticular degeneration
- Autosomal recessive
- Hepatic copper content (µg/gm dry wt. of liver- it exceeds >250 µg/gm dry wt.)
- D-Penicillamine with Pyridoxine and Zinc and all family members should be screened with s. ceruloplasmin and urinary excretion of cu, slit lamp examination
Station No 2: A term newborn who required resuscitation at birth with a 5 minute APGAR of 5 is admitted in NICU. The neonate had seizures in first 12 hrs of life.

Identify the findings-

What is the significance of this finding-

Name of the staging system other than Sarnat and Sarnat and give its component-

Station No 2: A term newborn who required resuscitation at birth with a 5 minute APGAR of 5 is admitted in NICU. The neonate had seizures in first 12 hrs of life.

Identify the findings

What is the significance of this finding-

Name of the staging system other than Sarnat and Sarnat and give its component-
• EEG of neonate showing Burst Suppression pattern
• It indicates serious outcome in HIE patients
• Levene’s staging system (Mild, Moderate and Severe)
  – Consciousness
  – Tone
  – Seizures
  – Sucking/Respiration
Station No 3

14 year old boy has sustained injury to the neck due to a Road Traffic Accident. He is breathing but cannot move or feel his arms or legs.

1. What is the recommended maneuver for opening the airway in neck injuries?

2. X ray of the Cervical spine shows no bony injury. Is it still possible for the boy to have a spinal cord injury? Name the condition and mode of diagnosis?

3. What is the Emergency drug treatment that can be offered to this boy?
1. Jaw Thrust without Head tilt.

2. YES. SCIWORA (Spinal Cord Injury Without Radiographic bone Abnormalities), MRI Spine.

3. Bolus of High dose Methyl Prednisolone (30 mg/kg) within 8 hrs of injury followed by a 23-hr infusion (5.4mg/kg/hr) -
Station No 4:

A 10 day old newborn was rushed to NICU by a local doctor as he found different pattern of his cardiac activity. O/E child had fine rashes over the face specially the periorbital area. ECG done in ER showed (1x5=5)

a) What is the ECG diagnosis? b) What is probable diagnosis?

c) What is the pathogenesis of this disease?

d) What is the Rx of this acute stage?

e) What is the earliest age at which this cardiac defect can detected antenatally?
• a) Complete heart block
• b) Neonatal Lupus
• c) Transfer of anti Ro antibodies between 12-16 wks of gestation
• d) Cardiac pacing
• e) 16 wks of GA
• **Station No 5**  A ( 1/2x6=3)  
Dispose the following biomedical waste in suitable bags  
1) blood agar media 2)used injection needle  
3) amikacin injection with expiry 4)blood soaked cotton swab  
5) i.v set  6) incinerated ash

• **B** (1x2=2)  
Identify the organism .  
• What is treatment?
• 1. yellow/red
• 2. blue/white
• 3. black
• 4. yellow/red
• 5. blue/white/red
• 6. black

• B. E. Histolytica
• nitroimidazole, metronidazole, chloroquine
Station No 6  This 3 yrs old female child came with neuro regression from early infancy with abnormal hand movements and autism (1x5=5)

What is the diagnosis?
What is the hallmark of this disorder?
What is age of onset of neuroregression?
Which are earliest neurological findings?
Which milestones are delayed?
• Retts syndrome –(1)
• Repetitive hand wringing movement and loss of purposeful and spontaneous use of hand (1)
• I year of age (1)
• Ataxic gait and fine tremors of hand (1)
• motor, language(1)
Osce-7
Write the results for each (dec/increase/absent)

<table>
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<tr>
<th>CONDITION</th>
<th>T4</th>
<th>FREE T4</th>
<th>T3</th>
<th>TSH</th>
<th>Goitre</th>
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<td>DEC</td>
<td>INC</td>
<td>+</td>
</tr>
<tr>
<td>HYPERTHYROIDISM</td>
<td>INC</td>
<td>INC</td>
<td>INC</td>
<td>DEC</td>
<td>+/-</td>
</tr>
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</table>
Station 8  The above pictures are of a 2 yrs old child who presented with intense pruritis, particularly at night. There are similar complaints seen in other family members. [1x5=5]

1) What is the diagnosis?
2) What the characteristic finding for same?
3) What are complications seen?
4) What is the causative agent?
5) What is the complete treatment for this case
1) SCABIES-0.5
2) BURROWS -0.5
3) GLOMERULONEPHRITIS AND PYODERMA (0.5+ 0.5)
4) Sarcoptes scabies
5) PERMETHRIN 5% (0.5+ 0.5)
   PRURITIS- TOPICAL CORTICOSTEROIDS (1)
   TREAT ENTIRE FAMILY(1)
• Station No.9
  RNTCP DOTS-Plus 2010 What are five essential components of RNTCP DOTS-Plus? (2 1/2)
• What is RNTCP Category IV used for and what it includes? (2 ½)
• Sustained political and administrative commitment
• Diagnosis of MDR-TB through quality-assured culture and drug susceptibility testing
• Appropriate treatment strategies that utilize second-line drugs under proper management conditions 4.
• Uninterrupted supply of quality assured anti-TB drugs.
• Recording and reporting system designed for DOTS-Plus programmes that enable performance monitoring and evaluation of treatment outcome

• RNTCP Category IV is a standardized regimen for treatment of MDR–TB patients.
• RNTCP CATEGORY IV REGIMEN: 6 (9) Km Ofx (Lvx) Eto Cs Z E / 18 Ofx (Lvx) Eto Cs E
A: In population sample of children with mean Ht66cm and SD 2.7 cm, Can a sample of 100 with mean ht 67cm occur easily? If you find that probability is low P<0.01 What does it indicates (2 1/2)

B: Find the limit within which you would expect the population proportion to be if you have examined the records of all 50 children of school and found 23 had tonsillectomy done (2 1/2)
• A;S X- =s/ ∫n= 2.7/ ∫100=0.27
• 67 is more than 66=3X0.27=66.8 cm this sample can’t easily occur in this population p is less than 0.01 it indicates 99% children are that sample are not drawn from same population might be higher age group. Probability of its being taken from same universe is less
• B;SEP= ∫pxq/n= ∫46x54/50=7.05
• 95% confidence limit of population proportion of tonsillectomy done will be 46+- 2x7=32-60%
Station 11

• A) Arrange following in ascending order of requirement daily (RDA) [2 1/2]
  Vit B6, Vit E, Cu, Iron, Calcium

• B) Write age independent anthropometric parameters for PEM (any 5) [2 ½]
- Vit B6-0.5-1.5 mg/d
- Vit E 5-15 Cu-1-2mg/d
- Iron-10-20mg/d
- Ca-500-1000mg/day

- Age independent anthropometric parameters for PEM( any 5)
  - Bangle test
  - Shakirs tape
  - Modified quac test
  - Kanawati index
  - Ponderal index
• **Station 12**: This is a Chest X-ray of an 11-year-old female child with a history of recurrent lower respiratory infections. 1x5=5

1) What is the diagnosis?
2) Write the a) clinical features and b) one important diagnostic clinical sign for the above condition.
3) Which syndrome is associated with the above condition?
4) Write the management.
5) What is the investigation of choice?
1) Bronchiectasis

2) a) Productive cough with copious expectoration
   - Hemoptysis
   - Growth retardation
   - Cyanosis
   - Chest Deformities (Harrison’s sulci)
     - Crepitations, wheeze, crackles may be heard on auscultation
   b) Clubbing

3) Kartagener’s syndrome may be associated.

4) Management-
   1. Treatment of underlying disorder
   2. Postural drainage
   3. Chest Physiotherapy
   4. Antibiotics
   5. Surgical removal of the affected area

5) HRCT
Station 13
Name each inheritance pattern and one example of each
STATION 14

2 yr old boy brought with H/o intermittent painless rectal bleeding for last few months. The stool is described as brick colour or currant jelly colour. Following study was performed:

1) What is the test performed?
2) Name the isotope used in the test.
3) Identify the dark areas on the film.
4) How do you enhance the yield of this test?
5) What is the treatment in this case?
Station 15  This is the bone marrow aspirate of a 15 month old child with a history of hypertonicity, aspiration pneumonia, and hepatosplenomegaly.

1) What are the findings?
2) What is the diagnosis? What are x-ray features?
3) What is confirmatory test?
4) Give 2 differential diagnoses for BM findings.
5) What is the Management?
Station 16  A

Match the following MPS

1) Hurler
2) Sly
3) Morquio-A
4) Marteaux-Lamy
5) Hunter

a) Beta glucuronidase
b) Iduronate sulphate sulphatase
c) Alpha-L-Iduronidase
d) N-Ac-galactosamine-6-sulphate sulphatase
e) Arylsulphatase B
• ANSWER
  TOTAL MARKS -2.5 ( 1/2X5)

• 1-c
• 2-a
• 3-d
• 4-e
• 5-b
• Station 16  B

Longitudinal studies are-

a) Either prospective or retrospective-  T/F
b) Either experimental or observational-  T/F
c) Are particularly suitable for estimating point prevalence of a condition -T/F
d) Cannot be used to estimate the incidence of a disease-  T/F
e) Can be used for assessing causality-  T/F
• Longitudinal studies are-
  • a) True
  • b) True
  • c) False
  • d) False
  • e) True
• Station 17

A) Write examples of each (2 ½)
• Live attenuated bacteria
• Live attenuated virus
• Inactivated bacteria
• Inactivated virus
• Toxoids

B) Write down the time limits for using the following vaccines after reconstitution-
• Varicella, Measles/MMR, DTaP/Hib Combination

C) Write the schedule of rabies vaccine for a person, who has been bitten by a dog but has received 5 doses of rabies vaccine earlier.
Station 18

Varicella = 30 min (and protect from light)
Measles/MMR = 4 to 6 hours
DTaP/Hib Combination = 30 min

For re exposure at any point of time after completed (and documented) pre or post exposure prophylaxis, two doses are given on days 0 and 3.

<table>
<thead>
<tr>
<th>Live attenuated bacteria</th>
<th>BCG, Ty21</th>
</tr>
</thead>
<tbody>
<tr>
<td>Live attenuated virus</td>
<td>OPV, MMR, Varicella</td>
</tr>
<tr>
<td>Inactivated bacteria</td>
<td>Pertusis, Whole cell killed Typhoid</td>
</tr>
<tr>
<td>Inactivated virus</td>
<td>IPV, HAV, Rabies</td>
</tr>
<tr>
<td>Toxoids</td>
<td>DT, TT, Td</td>
</tr>
</tbody>
</table>
1. 165.25
(Formula)
\[ \text{AaDO}_2 = (713 \times \text{FiO}_2) - (\text{pCO}_2 / 0.8) - (\text{paO}_2) \]

2. a) Partial compensation metabolic acidosis with hypoxia
   b) IVF/Inotopic support, inc Fio2

3. 11 ml O2 /dl
   Arterial Oxygen content = (Hb x 1.36 x SpO2) + (0.0031 x PaO2)
Station 19

15 months old child admitted with anemia without hepatosplenomegaly for evaluation, PS shows.

1) Identify and describe Slide?
2) What is the diagnosis?
3) What is the treatment?
4) What are differential diagnosis?
5) What is the inv of choice
1) MCHC
2) IDA
3) Iron supplement
4) Lead poisoning/ sideroblastic anemia
5) Serum ferritin
Match the following anti-arrhythmics with their classification

- 1) amiodarone
- 2) atenolol
- 3) flecainide
- 4) phenytoin
- 5) procainamide

- a) 1A- inhibits sodium fast channel- prolongs RP
- b) 1C- inhibits sodium channel
- c) 111-prolongs repolarization
- d) 1B- inhibits sodium fast channel-shortens RP
- e) 11- beta blockers
• 1-c)
• 2-e)
• 3-b)
• 4-d)
• 5-a)
Station 20 B

Match the following antiarrhythmics with their side effects

• 1) amiodarone
• 2) phenytoin
• 3) procainamide
• 4) atenolol
• 5) flecainide

• A) agranulocytosis
• B) thyroid dysfunction
• C) blurred vision
• D) macrocytic anemia
• E) bradycardia
• 1 – b)
• 2 - d)
• 3- a)
• 4- e)
• 5- c)
• Station 21 A
• A high risk OPD newborn investigated
1) Identify the figure [½]
2) What do waves I-VII stand for [1]
3) What are the indications for its use [1]
1) BERA

2)
1. Cochlear nerves - waves I and II
2. Cochlear nucleus - wave III
3. Superior olivary complex - wave IV
4. Nuclei of lateral lemniscus - wave V
5. Inferior colliculus - waves VI and VII

• Criteria for screening newborn babies using BERA for hearing:

• 1. Parental concern about hearing levels in their child
• 2. Family history of hearing loss
• 3. Pre and post natal infections
• 4. Low birth weight babies
• 5. Hyperbilirubinemia
• 6. Cranio facial deformities
• 7. Head injury
• 8. Persistent otitis media
Station 21  B This is an EEG recording of a 5 month old infant who episodically raises his arms and then flexes his neck, trunk and hips. The episodes last for a few seconds and end with a brief cry and return to a normal posture. What does the EEG show?

1) What syndrome is suggested by the history and EEG?[½]

2) What are the types of the syndrome? [1]

3) Give one condition associated with this syndrome [1/2]

4) Drug of choice for the above condition and its principal side effect [1/2]
• Hypsarrhythmia –[1]
• Infantile spasms- west syndrome- [1]
• Cryptogenic and symptomatic [0.5 + 0.5]
• Tuberous sclerosis- [1]
• Vigabatrin, retinal toxicity with resultant visual field defect [0.5+0.5]