MULTIPLE CHOICE QUESTIONS: (40 marks). N.B. Negative marking applies

1. The following statements are true with regard to connective tissue disease:
   (a) Usually presents with acute renal failure.
   (b) SLE is associated with a reduced life expectancy.
   (c) Scleroderma is more common in girls.
   (d) Is usually rheumatoid factor negative in boys with arthropathy.
   (e) Juvenile rheumatoid arthritis is generally steroid-resistant.

2. In children presenting with an urticarial rash:
   (a) When due to an ingested antigen, the rash classically appears after 3 days.
   (b) The rash is typically both pruritic and scaly.
   (c) Tachypnoea and wheeze may be present.
   (d) Topical steroids are first line treatment for the rash.
   (e) Epipen (adrenaline) may be used in selected cases to prevent angioedema.

3. Hypertrophic pyloric stenosis in infants:
   (a) Presents with vomiting immediately after birth.
   (b) Is associated with bile stained vomiting.
   (c) May cause projectile vomiting.
   (d) May be diagnosed with the help of an ultrasound study.
   (e) Surgical treatment is the treatment of choice.

4. With regard to the renal tracts, the following statements are true:
   (a) Minimal change nephrotic syndrome rarely responds to steroid therapy.
   (b) 300mg/L of protein on urine dipstick is within the normal range.
   (c) Ten red blood cells per high power field on urine microscopy is normal.
   (d) Reflux nephropathy may result in hypertension.
   (e) Children with posterior urethral valves usually present with urinary incontinence.
5. These vaccines are routinely given in Malta as follows:
(a) Measles – shortly after the first year of life.
(b) Tetanus – from two months of age.
(c) Hepatitis B – three doses, separated by six weeks and three months.
(d) Diphtheria – a single dose at school leaving.
(e) Anti strep. pneumoniae – from three months of age.

6. Visceral leishmaniasis in childhood:
(a) May present with a prolonged fever.
(b) May present with pancytopenia.
(c) Only rarely results in splenomegaly.
(d) May be diagnosed on bone marrow aspirate.
(e) May be treated with liposomal amphotericin B.

7. An arterial blood gas in a preterm baby with respiratory distress syndrome on nasal prong oxygen shows: pH 7.12, pCO₂ 65mmHg, pO₂ 35mmHg; base deficit -12:
(a) The baby has a compensated respiratory acidosis.
(b) The baby has a metabolic acidosis.
(c) The baby is probably hyperventilating.
(d) The baby may require ventilatory support.
(e) The baby may have a severe congenital pneumonia.

8. In contrast to an exclusively breastfed baby, a baby fed on cow’s milk formula:
(a) Passes stool of harder consistency.
(b) Passes virtually odourless, yellow stool.
(c) Passes stool less frequently.
(d) Exhibits fewer episodes of infant colic.
(e) Feeds less frequently.

9. The following developmental milestones are correct:
(a) Infants say discreet words at six months of age.
(b) Infants would be expected to sit unaided by eight months of age.
(c) Children cannot walk upstairs before three years.
(d) Children are usually dry by night between two to three years.
(e) Children can copy a circle at around three years of age.

10. Bronchiolitis in children:
(a) Rarely affects children under the age of six months.
(b) May require oxygen therapy.
(c) May require intubation and ventilation.
(d) Is usually treated with intravenous or oral steroids.
(e) Is most commonly caused by adenovirus.
11. Idiopathic thrombocytopenic purpura:
(a) Is caused by platelet autoantibodies.
(b) May mimic meningococcaemia at presentation.
(c) Is usually self remitting.
(d) May cause fatal intracerebral haemorrhage.
(e) May be treated using oral steroids.

12. The following drugs are indicated in the control of status epilepticus:
(a) Intramuscular phenobaritone.
(b) Intramuscular diazepam.
(c) Rectal diazepam.
(d) Buccal midazolam.
(e) Intravenous lorazepam.

13. With regard to hyperthyroidism:
(a) This may be associated with the presence of a multi-nodular goitre.
(b) Elevated titres of anti-thyroid peroxidase antibody may be present.
(c) Serum levels of thyroxine and thyroid-stimulating hormone are both low.
(d) It is more common in boys rather than girls.
(e) In most cases, is treated with surgical resection.

14. Complications of childhood pneumonia include:
(a) Pleural effusions.
(b) Lung abcess.
(c) Generalised septicaemia.
(d) Respiratory arrest.
(e) Long term pulmonary dysfunction.

15. Aortic stenosis in childhood:
(a) Is frequently associated with a bicuspid aortic valve.
(b) Almost always occurs in combination with a ventricular septal defect.
(c) May produce left ventricular dilatation.
(d) May be associated with a click on auscultation.
(e) May give rise to endocarditis.

16. In neonates:
(a) Apnoea may be caused by underlying septicaemia.
(b) Conjugated hyperbilirubinaemia is initially treated by phototherapy.
(c) Hyperglycaemia is common in infants of diabetic mothers.
(d) Seizures may be caused by intraventricular haemorrhages.
(e) Persistant patent ductus arteriosus is more common in the premature.
17. Atopic eczema in childhood:
(a) Is caused by *Staphylococcus epidermidis*.
(b) Usually follows an intermittent course with flare-ups.
(c) Can be prevented by vaccination against rotavirus in infancy.
(d) May result in significant lichenification in chronic sufferers.
(e) May respond to early administration of immune modifying drugs such as tacrolimus.

18. The following disorders are inherited as autosomal recessive conditions:
(a) Cystic fibrosis.
(b) Congenital hypertrophic pyloric stenosis.
(c) Haemophilia A.
(d) GM1 gangliosidosis.
(e) Phenylketonuria.

19. Features of early onset meningitis within three days of life include:
(a) A mortality of less than 10%.
(b) A typical evanescent fever that is pathognomonic.
(c) The absence of focal signs of infection.
(d) Hydrocephalus as a serious complication.
(e) Is usually due to a viral aetiology.

20. Informed consent for an elective medical procedure:
(a) Should be signed and witnessed.
(b) Should be explained in detail by the attending nurse.
(c) Should be obtained immediately prior to anaesthesia.
(d) Is truly informed if 50% of the issues relating to the procedure are covered.
(e) If inadequate, may be the basis for litigation.

21. Finger clubbing can be caused by:
(a) Bronchiectasis.
(b) Campylobacter enteritis.
(c) Tetralogy of Fallot.
(d) Coeliac disease.
(e) Crohn’s disease.

22. In neonates with birth injury:
(a) Facial nerve palsy is often not related to the use of obstetric instrumentation.
(b) Erb’s palsy is caused by brachial plexus injury at the C2-C3 level.
(c) Cephalhaematoma may worsen physiological neonatal jaundice.
(d) A subaponeurotic haematoma may present with hemorrhagic shock.
(e) Congenitally dislocated hips are often the result of difficult deliveries.
23. The following conditions are possible causes of polyuria in children:
   (a) Hyperglycaemia.
   (b) Syndrome of Inappropriate Anti-Diuretic Hormone secretion (SIADH).
   (c) Hypercalcaemia.
   (d) Hyperthyroidism.
   (e) Growth hormone deficiency.

24. Cystic fibrosis:
   (a) Is caused by an abnormality in the CFTR gene.
   (b) May present in the neonatal period with meconium ileus.
   (c) Is usually diagnosed by an elevated sweat magnesium level.
   (d) Shows an obstructive pattern on lung function.
   (e) Is usually associated with malabsorption.

25. Anorexia nervosa:
   (a) May be associated with a depressive disorder.
   (b) Only occurs in female individuals.
   (c) Can be treated by proprietary appetite stimulants.
   (d) Can be associated with secondary amenorrhoea.
   (e) Can be associated with an intracranial tumour.
Short questions (10 marks each; no negative marking)
Please use a separate booklet for each question

1. A newborn is noted to have a systolic murmur at the upper left sternal edge and to be dusky in colour a few hours after birth.

   (a) What rapid bedside investigation may be useful?
   (b) What other investigations are required?
   (c) List three possible causes for this presentation.
   (d) What active intervention/s may be necessary?
   (e) What pharmacological treatment may be beneficial and why?

2. A six-year-old girl is brought to medical attention because of vaginal bleeding that was noticed for three days in succession. Examination confirmed bilateral breast development (Tanner stage 4), and blood was noted in her underwear.

   (a) What is the most likely diagnosis?
   (b) List four other important features that you would assess on clinical examination.
   (c) Give four relevant investigations to help reveal the underlying cause.
   (d) Outline your management of this girl.

3. A four-year-old boy developed colicky, diffuse abdominal pain and a high fever over two days. He also has frequent, watery stools with blood, but no vomiting, and was noted to be significantly distressed and toxic on admission.

   (a) Give four relevant investigations that you would request.
   (b) Outline your plan of management.
   (c) Name two possible micro-organisms that could account for these clinical features.

4. A nine month old male infant presents to the paediatric accident and emergency department with a two day history of vomiting, irritability and a fever of 39°C. His parents were giving him paracetamol to control his fever. He was born with a lumbar spina bifida, and had a neurosurgical operation at one day of age to close the defect. Four weeks later, he had had a ventriculoperitoneal (VP) shunt inserted.

   (a) Why was the VP shunt required?
   (b) What is the most likely type of spina bifida that this infant has?
   (c) In relation to the VP shunt, what clinical examination would you do?
   (d) Taking into consideration his underlying medical problems, what two diagnoses could explain his presenting clinical features?
   (e) How would you confirm these diagnoses?
   (f) What would be your next step after you are ready from the assessment of the child in the accident and emergency room?
A six-year old boy presented to paediatric casualty following a seven-day history of an increased need to pass urine and two days with general lethargy. He seemed to perk up in casualty, was unable to pass a sample of urine and, after his mother complained that she didn’t want to wait any longer, was allowed home by the casualty officer. He represented fifteen hours later in a semi comatose state with rapid respirations.

a.  **Comment on the casualty officer’s earlier decision to allow his discharge.**

b.  **What immediate bedside investigations are required at re-presentation?**

On the second visit to casualty, examination confirmed a central temperature of 36.8°C, tachypnoea, a BP of 105/50, sunken eyes and cold peripheries in a boy who was only responding to verbal commands.

c. **What may be contributing to the tachypnoea.**

d. **What other clinical signs would have been likely on examination?**

In view of the poor level of consciousness, the paediatric registrar is called urgently to review this boy. He makes a diagnosis, orders some investigations and immediately sets up an intravenous line to start an infusion ‘to hydrate the child’ pending the results of his investigations.

e. **What investigations were requested?**

f. **Which infusion fluid was chosen by the registrar?**

g. **What was the registrar’s presumptive diagnosis?**

The child is admitted to a high dependency unit and closely monitored over the next two days during which time his clinical condition improved.

h. **What clinical parameters required close monitoring over the first two days?**

i. **What other therapeutic measures were instigated over this time period?**

His family require regular instruction over the next ten days before he is ready for discharge, hindered by his father’s low IQ and mother’s nervous and impatient disposition.

j. **Outline the important steps required in the management plan of this boy once discharged from hospital.**
ANSWERS

Answers to MCQs:-

1. a) false  
   b) true  
   c) true  
   d) true  
   e) false

2. a) false  
   b) false  
   c) true  
   d) false  
   e) true

3. a) false  
   b) false  
   c) true  
   d) true  
   e) true

4. a) false  
   b) false  
   c) true  
   d) true  
   e) false

5. a) true  
   b) true  
   c) true  
   d) false  
   e) false

6. a) true  
   b) true  
   c) false  
   d) true  
   e) true

7. a) false  
   b) true  
   c) false  
   d) true  
   e) true
8. a) true  
   b) false  
   c) true  
   d) false  
   e) true  

9. a) false  
   b) true  
   c) false  
   d) true  
   e) true  

10. a) false  
    b) true  
   c) true  
   d) false  
   e) false  

11. a) true  
    b) true  
   c) true  
   d) true  
   e) true  

12. a) false  
    b) false  
   c) true  
   d) true  
   e) true  

13. a) true  
    b) true  
   c) false  
   d) false  
   e) false  

14. a) true  
    b) true  
   c) true  
   d) true  
   e) true
15. a) true
   b) false
   c) true
   d) true
   e) true

16. a) true
   b) false
   c) false
   d) true
   e) true

17. a) false
   b) true
   c) false
   d) true
   e) true

18. a) true
   b) false
   c) false
   d) true
   e) true

19. a) false
   b) false
   c) true
   d) true
   e) false

20. a) true
   b) false
   c) false
   d) false
   e) true

21. a) true
   b) false
   c) true
   d) true
   e) true
22. a) true
   b) false
   c) true
   d) true
   e) false

23. a) true
   b) false
   c) true
   d) true
   e) false

24. a) true
   b) true
   c) false
   d) false
   e) true

25. a) true
   b) false
   c) false
   d) true
   e) true
Answers

Question 1:

a). What rapid bedside investigation may be useful?
   Pulse oximetry. 1 point

b). What other investigation is required?
   Echocardiography. 2 points
   ECG and/or CXR max 1 point

c). List three possible causes.
   TOF, PS, tricuspid atresia etc. 1 point each to max of 3

d). What active intervention/s may be necessary?
   Catheter intervention (balloon valve/septostomy etc) and surgery 2 points

   e). What pharmacological treatment may be beneficial and why?
   Prostaglandin infusion in order to reopen ductus 2 points

2.  

   a) Precocious puberty 1

   b) Height, height velocity, axillary / pubic hair, acne, 1 each (max 4)
      café-au-lait macules, apocrine odour, BP, abdominal exam, goitre, visual fields, fundoscopy.

   c) TFT, LH & FSH, Oestradiol, LHRH test, Bone 1 each (max 4)
      age, US pelvis, Brain imaging (CT / MRI)

   d) Specialist referral 0.5
      GnRH agonist (e.g. leuprolelin) 0.5
3. a). CBC, CRP, U&E, creatinine, blood culture, stool culture 1 each (max 4)
   b) Hospital admission, IVI fluids, Nil PO, fluid input-output monitoring, surgical review, antibiotics 1 each (max 4)
   c) Salmonella, Shigella, E. coli, Campylobacter 1 each (max 2)

4. Answers

   (a) Hydrocephalus 1
   (b) Myelomeningocele 1
   (c) Look for a bulging fontanelle 1
       Assess emptying and refilling of shunt chamber 1
   (d) VP shunt infection/blockage 1
       UTI 1
   (e) Culture of CSF aspirated from shunt chamber 1
       Urine analysis and culture 1
       Blood cultures 0.5
       Others sepsis screen tests: CBC, CRP, CXR, swabs 0.5
   (f) Admit the child for further management (not send home on antibiotics!) 1
## Answers: Interactive question:

<table>
<thead>
<tr>
<th>Question</th>
<th>Score</th>
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</thead>
<tbody>
<tr>
<td><strong>a. Comment on the casualty officer’s decision to allow his earlier discharge.</strong></td>
<td></td>
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<tr>
<td>Ignored warning signs</td>
<td>0.5</td>
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<tr>
<td>Try convince mother to stay/collect urine first</td>
<td>0.5</td>
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<tr>
<td><strong>b. What immediate bedside investigations are required at re-presentation?</strong></td>
<td></td>
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<tr>
<td>Blood glucose</td>
<td>1.5</td>
</tr>
<tr>
<td>Urine ketones (=1);</td>
<td>1</td>
</tr>
<tr>
<td>[urinary glucose (=0.5) or blood gas (=0.5)</td>
<td>0.5</td>
</tr>
<tr>
<td><strong>c. Comment further on the tachypnoea.</strong></td>
<td></td>
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<tr>
<td>Kussmaul breathing/indicates metabolic acidosis</td>
<td>1</td>
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<tr>
<td>Exacerbated by fever</td>
<td>0.5</td>
</tr>
<tr>
<td><strong>d. What other clinical signs would have been likely on examination?</strong></td>
<td></td>
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<tr>
<td>Signs of dehydration or shock</td>
<td>2</td>
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<tr>
<td>Smell ketones</td>
<td>1</td>
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<tr>
<td><strong>e. What investigations were requested?</strong></td>
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<tr>
<td>Blood glucose</td>
<td>1</td>
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<tr>
<td>Electrolytes</td>
<td>1</td>
</tr>
<tr>
<td>Blood gas</td>
<td>1</td>
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<td>Urinalysis</td>
<td>1</td>
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<tr>
<td>CXR</td>
<td>0.5</td>
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<tr>
<td><strong>f. What infusion was set up?</strong></td>
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<td>Initially 0.9% saline</td>
<td>1</td>
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<tr>
<td><strong>g. What was his presumptive diagnosis?</strong></td>
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<tr>
<td>DKA</td>
<td>1</td>
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<tr>
<td><strong>h. What other clinical parameters required close monitoring over the first two days?</strong></td>
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<tr>
<td>Pulse, BP, urine output, neurological state, resp rate (0.5 each to max 2)</td>
<td>2</td>
</tr>
<tr>
<td><strong>i. What other therapeutic measures were instigated over this time period?</strong></td>
<td></td>
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<tr>
<td>Insulin infusion</td>
<td>1</td>
</tr>
<tr>
<td>Potassium</td>
<td>0.5</td>
</tr>
<tr>
<td>[Antibiotics</td>
<td>0.5</td>
</tr>
<tr>
<td><strong>j. Outline the important steps required in the management plan of this boy once discharged from hospital.</strong></td>
<td></td>
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<tr>
<td>Monitor growth, control diet</td>
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<tr>
<td>Monitor glucose profile, check HbA1c</td>
<td></td>
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<tr>
<td>Adjust insulin regimen, administration</td>
<td></td>
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<tr>
<td>IDDM education</td>
<td>0.5 each to max 2</td>
</tr>
</tbody>
</table>