

UNIVERSITY OF JAFFNA, SRI LANKA
BACHELOR OF SCIENCE IN MEDICAL LABORATORY SCIENCES
FOURTH YEAR SECOND SEMESTER EXAMINATION- JANUARY 2013
MLSCF 4202 CLINICAL CHEMISTRY AND FLUID ANALYSIS

Date: 10/01/2013

Time: 3 Hours

ANSWER ALL SIX QUESTIONS.



1.

1.1. A 65 year old lady who has diabetes mellitus for 15 years, presented with the history of nausea and loss of appetite. She complained of passing frothy urine for last 2 weeks and generalized body itching. On examination, she was found to have periorbital and ankle oedema. Her body weight was 50kg; Blood pressure was 160/90mmHg. She was suspected to have chronic renal failure.

1.1.1. List the investigations that could be helpful in the diagnosis and further management. **(15 Marks)**

1.1.2. What could be the significant findings of above investigations? **(30 Marks)**

1.1.3. Define Glomerular Filtration Rate (GFR)? **(15 Marks)**

1.1.4. Calculate her estimated GFR using following formula. Serum creatinine level was 150 μ mol/l. **(10 Marks)**

$$\text{GFR} = \frac{(140 - \text{age}) \text{ wt.} \times \text{F}}{\text{serum creatinine } (\mu\text{mol})} \quad (\text{F} = 1.2 \text{ to males and } 0.85 \text{ to females; })$$

1.2. What advice you would give to the patient when collecting sample for the urine culture? **(30Marks)**

2.

2.1. 75 year old emaciated man presented with the history of passing dark colour urine, loss of weight, loss of appetite and generalized body itching for 3 weeks. He was diagnosed to have colonic malignancy 4 months ago. On examination he was icteric and found to have hepatomegaly which is hard in consistency.

2.1.1. What investigations would be helpful to diagnosis of above condition?

(20 Marks)

2.1.2. Interpret the expected significant findings in above investigations. **(30 Marks)**

2.2. Describe the changes that might occur in different types of the bilirubin in blood and urine in following conditions:

2.2.1. Obstructive jaundice. **(25 Marks)**

2.2.2. Hemolytic jaundice. **(25 Marks)**

3. A 52 years old man was referred to the gastroenterology clinic for the investigation of chronic abdominal pain, weight loss and diarrhoea. His abdominal pain was exacerbated by food. His stool was foul smelly and bulky. He had a history of alcoholism in past 32 years. His findings are given below:

		Reference range
Bilirubin ($\mu\text{mol/l}$)	16	<20
ALT(IU/L)	28	<40
Albumin	28	35-50
ALP(IU/L)	325	30-120
Corrected calcium(mmol/l)	2.1	2.25-2.55
Phosphate (mmol/l)	0.6	0.8-1.2
Glucose(mmol/l)	12	
Amylase(IU/L)	185	<200

3.1. Briefly explain the above findings. **(40 Marks)**

3.2. What test you would do to confirm the malabsorption? **(10 Marks)**

3.3. Give reasons for perform the above test to this patient. **(25 Marks)**

3.4. Explain the procedure of above test. **(25 Marks)**

4.

4.1. List five important investigations that are useful for the diagnosis of hypothyroidism. **(15 Marks)**

4.2. Interpret the expected findings of above investigations in primary hypothyroidism. **(30 Marks)**

4.3. Name the investigation that needs to be done for an elderly patient presented with solitary nodule. As a Medical Laboratory Technician in the laboratory how would you report the findings of above investigation? **(25 Marks)**

4.4. Give one dynamic function test useful in detecting hyper-function of the adrenal gland. Explain it. **(30 Marks)**

5.

5.1. A 32 years old woman presented with secondary amenorrhea.

5.1.1. List the investigations that you would perform in this patient? **(20 Marks)**

5.1.2. Explain the reasons for perform each of the investigation mentioned in 5.1.1.

(30 Marks)

5.2.

5.2.1. What are the investigations that could be helpful in the diagnosis of poly cystic ovarian syndrome? **(20 Marks)**

5.2.2. Interpret the expected findings? **(30 Marks)**

6.

6.1. A 35 years old male complained of lethargy and tiredness for past few months. His haemoglobin was 8%.

6.1.1. List the investigations that could be carried out in this patient. **(20 Marks)**

6.1.2. Explain the reasons for selecting above investigations. **(40 Marks)**

6.2.

6.2.1. Give one condition that give

a. False positive for occult blood test in the stool. **(5 Marks)**

b. False negative results for occult blood test in the stool. **(5 Marks)**

6.2.2. List the important steps to perform occult blood test in the stool. **(30 Marks)**

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