

DURATION: 3 HOURS

TOTAL: 150 MARKS

External examiner:

Internal examiner: Mrs J Galliers, Mrs S Kassier

NOTE: THIS PAPER CONSISTS OF SIX (6) PAGES PLUS APPENDIX I, II AND III AND AN ANNEXURE OF 24 PAGES. PLEASE SEE THAT YOU HAVE THEM ALL.

INSTRUCTIONS:

- ANSWER THREE (3) OUT OF THE FOUR QUESTIONS
- WRITE YOUR STUDENT NUMBER ON ALL ANSWER BOOKS AS WELL AS APPENDIX I, II AND III (EXTRA COPIES HAVE BEEN INCLUDED IN CASE YOU MAKE A MISTAKE)
- DO NOT WRITE IN PENCIL-IT WILL NOT BE MARKED
- ANSWER EACH QUESTION IN A SEPARATE ANSWER BOOK
- WRITE LEGIBLY. IF IT CANNOT BE READ, IT WILL NOT BE MARKED

QUESTION 1

1.1 A 26 year old lady was involved in a MVA and was admitted to hospital with a GCS of 9/15. She was diagnosed with a biventricular haemorrhage, corpus collosum bleed and a single fracture to the skull. She was afebrile with chest crackles at the left base. Medications prescribed included a sedative, an anticonvulsant, pain killers and antibiotics. There is no medical history available.

Anthropometry:

Weight: 56kg

Height: 1.66m tall

MUAC: 28.5cm

Biochemistry: blood albumin= 30g/l. Her other blood results are within normal range.

Vitals: her pulse rate is normal and her blood pressure is 120/80.

Her ICP is of concern as it is gradually but steadily increasing.

- 1.1.1 Assess her nutritional status. **(4)**
- 1.1.2 Assess her medical status from the limited information above discussing how this may impact her feeding. **(7)**
- 1.1.3 Describe briefly how you would measure MUAC. **(4 x ½ =2)**
- 1.1.4 On day 2 post MVA, you are asked whether you feel that it is safe to begin feeding via the jejunostomy tube that was placed in theatre the previous day. Discuss your decision in detail. **(5)**
- 1.1.5 If you had been given a choice in this particular patient would you have agreed with the jejunostomy tube or would you have requested a nasogastric tube? Elaborate. **(5)**
- 1.2 Mr Smith is admitted to the medical ward late on Friday night. He has a long history of alcohol abuse. He is diagnosed with Hepatic Encephalopathy (stage II). He has moderate ascites.
Age: 55
Current Weight: 65kg
Height: 1.76m
- 1.2.1 Based on the grading of the hepatic encephalopathy, what symptoms would you expect the patient to present with? **(6 x ½ =3)**
- 1.2.2 When you get to the ward on Monday the sister in charge has prescribed a low protein diet. She approaches you to ask if she ordered the right diet. You are aware that this is a controversial issue. Try to explain all areas of the argument to the sister-in-charge. **(7)**

1.2.3 Mr Smith has been eating his low protein diet and has been able to complete all meals even though he finds this difficult as he does not always have an appetite. This diet is providing him with 7165kJ, 30g of protein, 266g of carbohydrate and 53g of fat.

1.2.3.1 Calculate Mr Smith's requirements according to the Diploma recommendations. Complete Appendix I. **(9)**

1.2.3.2 On a ward round you are asked to explain why it may be useful to supplement with branch chain amino acids (BCAA) in liver disease. Please elaborate **(8)**

TOTAL: 50 MARKS

QUESTION 2

Mr M is a 36 year old male that has recently been admitted to hospital with chronic renal failure for which he is receiving haemodialysis.

The following blood values are available:

Urea	22 mmol/l
Creatinine	500 μ mol/l
Phosphate	2,9 mmol/l
Potassium	6,1 mmol/l
Sodium	160 mmol/l
Albumin	25 g/l
Calcium	1,84mmol/l
RBC	3,41 x 10 ² /l

Anthropometry:

Weight: 55,2kg (post dialysis)

Height: 1,72m

Urine output: 400ml/day

- 2.1 Interpret the above values giving a disease appropriate reason/s for this patient **(24)**
- 2.2 Indicate why Mr M's calcium level is a "false low" value **(2)**
- 2.3 Calculate a dietary prescription for him using Appendix II **(9)**
- 2.4 What are the dangers associated with having a potassium level of 6,1mmol/l? **(3)**
- 2.5 Compile practical guidelines on how he could reduce his potassium intake **(10)**
- 2.6 Recommend TWO vitamins this patient should be supplemented with. Justify your answer **(2)**

TOTAL: 50 MARKS

QUESTION 3

Michael is a 4 year old boy who presents to the paediatric ward with malnutrition and gastroenteritis. His weight is 12kg, and his height is 100cm. He is very lethargic and miserable.

His mother is present, although she is not his main carer. She does not know what the grandmother was feeding Michael at home, as she only goes home every 3 months because she works in another province.

His blood results are as follows:

Sodium	131mmol/l
Potassium	3,1mmol/l
Chloride	94mmol/l
Urea	2mmol/l
Creatinine	46µmol/l
Calcium	1,7mmol/l
Magnesium	0,67mmol/l
Phosphate	0,5mmol/l
Albumin	15g/l
GFR	3,1mmol/l

- 3.1 List the WHO's 10 steps for the management of inpatient severe malnutrition and indicate how this patient could be managed accordingly **(27)**
- 3.2 Calculate his IBW and % underweight **(4)**
- 3.3 Do you think Michael is at risk for re-feeding syndrome? Please elaborate on your answer and indicate how re-feeding syndrome can be prevented. **(10)**
- 3.4 What basic advice could you give the mother to implement at home with Michael's main carer, to help improve his nutritional status and avoid any future episodes of gastroenteritis. **(4)**
- 3.5 Michael has been prescribed Vitamin A by the doctor. What is the reason for this? List 4 sources of Vitamin A in the diet **(5)**

TOTAL: 50 MARKS

QUESTION 4

Thandi is a 9 year old girl who lives with her parents and four siblings on a farm outside Pietermaritzburg. Her parents work on the farm. The family have access to lights, water and have a refrigerator and stove in their home.

Thandi is a grade 4 learner and has to walk quite a distance to school every morning with her brothers and sisters. As the children have to get up very early to get to school on time, they often don't eat breakfast.

Thandi's mom recently noticed that Thandi had lost weight and seemed tired all the time. She took Thandi to the doctor, and Thandi was admitted to hospital with the following complaints: weight loss, fatigue, polydipsia, polyphagia and polyuria. She was diagnosed with Type 1 Diabetes.

Anthropometrics:

Weight: 23kg

Height: 130cm

Biochemistry: All results were normal except for a fasting glucose of 12mmol/l, and random glucose reading of 17mmol/l. Ketones were present in her urine.

HbA1c results are pending

Diet history:

Meal	Item
Breakfast	Nothing
Tea break at school	2 slices white bread with peanutbutter, juice Tuckshop 3 x week: sweets or chips, Coke
Lunch (provided by school)	Cooked meal- chicken/mince/beans with rice and 2 veg 2 slices white bread with margarine
Tea at home	4 slices white bread with peanutbutter Tea with milk and 3 tsp sugar
Supper	Cooked meal- mince/chicken/beans with rice/potato/phutu and 1 veg Tea with milk and 3 tsp sugar

On weekends the family eat biscuits and drink Coke in addition to the regular meals

- 4.1 What is the difference between Type 1 and Type 2 Diabetes? **(7)**
- 4.2 Calculate Thandi's BMI, IBW and the % difference between her IBW and ABW **(3)**
- 4.3 Interpret her nutritional status **(3)**
- 4.4 Calculate her nutritional requirements using Appendix III **(18)**
- 4.5 What is HbA1C and why is it a useful blood test? **(3)**

- 4.6 Define: polydipsia, polyphagia, polyuria (3)
- 4.7 What dietary advice would you offer to Thandi and her mom, based on her diet history (10)
- 4.8 The doctor prescribes Actraphane (a premix insulin) for Thandi until her blood glucose readings are under control.
- 4.8.1 How many injections per day is Thandi given? (1)
- 4.8.2 How many meals and snacks per day is Thandi supposed to eat? (2)

TOTAL: 50 MARKS