COLLEGE OF INTENSIVE CARE MEDICINE
OF AUSTRALIA AND NEW ZEALAND

FIRST PART EXAMINATION
WEDNESDAY 6TH AUGUST 2025
AFTERNOON PAPER

SHORT ANSWER QUESTIONS (SAQs)

(A) Write your answers in the booklets provided.

(B) Each SAQ should be answered in a ***separate*** answer booklet.

(C) You should aim to allocate **10 minutes** to answer each SAQ.

(D) All SAQs are worth **equal** marks.

(E) SAQs with more than one part have the proportion of marks indicated for each part.

(F) Record your **candidate number** and **question number** on the cover of each book and page

(G) **Please DO NOT write in the blue margins of the answer booklets.**

At the end of the exam hand your answer booklets and question papers to the Invigilator.

GLOSSARY OF TERMS

- Classify: Divide into categories; organise, arrange
- Compare and contrast: Examine similarities and differences
- Define: Give the precise meaning
- Describe: Give a detailed account of
- Explain: Make plain or known in detail
- List: Provide a short note in point form
- Outline: Provide a summary of the important points

PLEASE USE A SEPARATE BOOKLET TO WRITE YOUR ANSWER FOR EACH QUESTION

Question 11

Describe the control of breathing using the following headings:

(a) sensors (50% of marks)

(b) controllers (40% of marks)

(c) effectors (10% of marks)

Include in your answer the location(s) and function(s) of each.

Question 12

(a) Define morbid obesity (5% of marks).

(b) Outline the cardiovascular changes associated with morbid obesity (95% of marks).

Question 13

(a) What is lymph and what is its normal volume? (10% of marks).

(b) Outline the following with respect to lymph:

(i) composition (20% of marks)

(ii) circulation (45% of marks)

(iii) functions (25% of marks)

Question 14

Outline the physiology of the parasympathetic nervous system using the following headings:

(a) the anatomical origins and target organ(s) (45% of marks)

*Responses of the organ(s) are **NOT** required.*

(b) nerve fibre classification and characteristics (20% of marks)

(c) receptor types, locations and neurotransmitters (35% of marks)

Question 15

Explain the role of the liver with respect to the following:

(a) metabolic role in nutrition (30% of marks)

(b) other metabolic and excretory functions (30% of marks)

(c) storage and secretory functions (25% of marks)

(d) immune functions (15% of marks)

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Question 16

(a) Outline the structure of mitochondria (20% of marks).

(b) List the functions of mitochondria (20% of marks).

(c) Explain the role of mitochondria in the metabolism of carbohydrates (60% of marks).

Question 17

Describe the complement system using the following headings:

(a) components (30% of marks)

(b) activation pathways (10% of marks)

(c) role and functions (50% of marks)

(d) control and regulation (10% of marks)

Question 18

(a) Define the following: (10% of marks)

(i) heat

(ii) temperature

(iii) specific heat capacity

(b) Outline the principles underlying the different methods of temperature measurement using the following headings:

(i) electrical methods (60% of marks)

(ii) non-electrical methods (30% of marks)

Your answer should include examples of each method and their advantages and disadvantages of use.

Question 19

Outline the following pharmacology of phenytoin:

(a) dosage (15% of marks)

(b) mechanism of action (15% of marks).

(c) adverse effects (30% of marks)

(d) pharmacological considerations relevant to safe and effective use (40% of marks)

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Question 20

Describe the following pharmacology of both unfractionated heparin and bivalirudin:

(a) indications for use (10% of marks)

(b) mechanism of action (30% of marks)

(c) monitoring and reversal (10% of marks)

(d) important pharmacokinetic differences and considerations when using in the intensive care unit (ICU) (30% of marks)

(e) adverse effects (20% of marks).