



COLLEGE OF INTENSIVE CARE MEDICINE OF AUSTRALIA AND NEW ZEALAND

FIRST PART EXAMINATION

WEDNESDAY 25 FEBRUARY 2026

MORNING PAPER – SHORT ANSWER QUESTIONS

INSTRUCTIONS FOR CANDIDATES

- Write your answers in the booklets provided.
- Each SAQ should be answered in a **separate** answer booklet.
- You should aim to allocate **10 minutes** to answer each SAQ.
- All SAQs are worth **equal** marks.
- SAQs with more than one part have the proportion of marks for each part indicated.
- Record your **candidate number** and **question number** on the cover of each book and on each page of the booklet.
- 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

- Calculate: Work out or estimate using mathematical principles
- 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
- Interpret: Explain the meaning or significance
- Outline: Provide a summary of the important points
- Relate: Show a connection between
- Understand: Appreciate the details of; comprehend

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

Question 1

- a) Explain the mechanisms responsible for the resting membrane potential of a neuronal cell (60% of marks).
- b) Describe the Gibbs-Donnan effect (40% of marks).

Question 2

Outline the determinants of oxygen delivery to the tissues.

Question 3

Compare and contrast the pharmacology of adrenaline and milrinone using the following headings:

- a) mechanism of action (30% of marks),
- b) pharmacokinetics relevant to the metabolism and elimination of each drug (20% of marks),
- c) pharmacodynamics and adverse effects (50% of marks).

Question 4

- a) For both, haemodialysis and haemofiltration, describe the following:
 - i) the physical principles (40% of marks),
 - ii) the factors affecting solute clearance (40% of marks).
- b) Outline the key components of renal replacement fluids (20% of marks).

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Question 5

For each neurotransmitter listed below:

- a) acetylcholine (ACh),
- b) gamma-aminobutyric acid (GABA),
- c) noradrenaline (norepinephrine, NorAd),
- d) serotonin (5-HT).

Outline the following:

- i) target receptors, including type and location (15% of marks per neurotransmitter).
Downstream receptor mechanisms are NOT required.
- ii) functional role(s) (10% of marks per neurotransmitter).

Question 6

Outline the potential adverse effects of red blood cell transfusion.

Effects secondary to massive transfusion are NOT required.

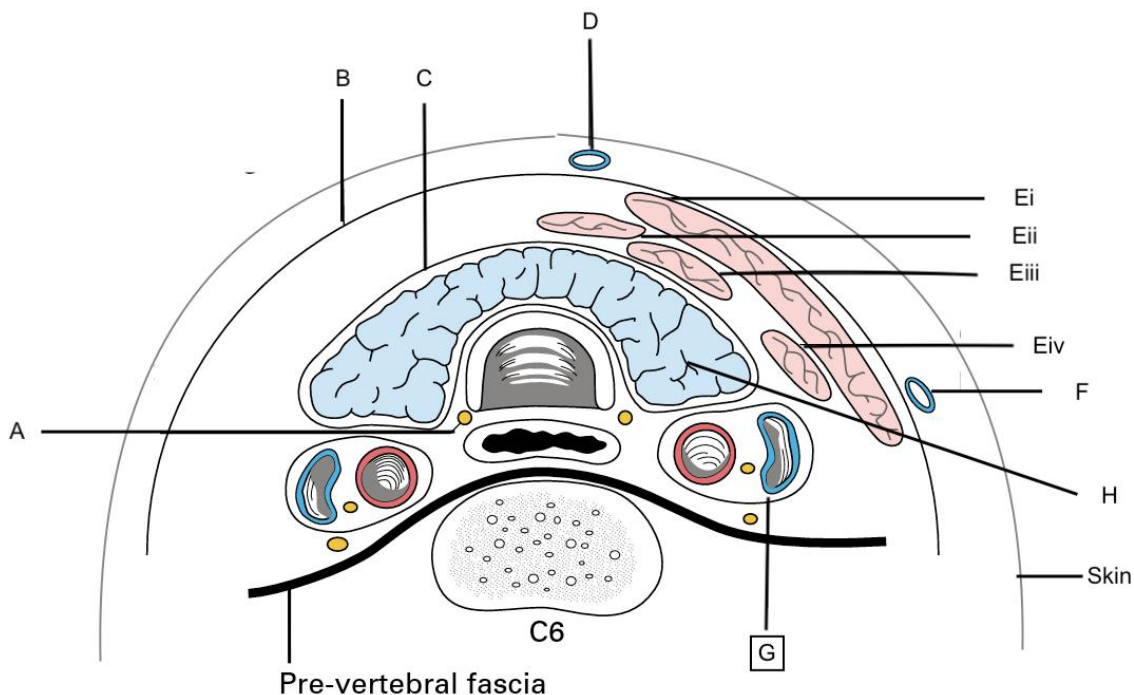
Question 7

Describe the cardio-respiratory changes that occur throughout pregnancy (excluding parturition). Include in your answer the factors responsible for these changes.

Question 8

- a) On the diagram below, identify the anatomical structures labelled A-G (40% of marks).
- b) Describe the structural anatomy of the trachea, excluding the anatomical relations (45% of marks).
- c) Outline the ideal location for the insertion of percutaneous tracheostomy tube (15% of marks).

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



Question 9

Compare and contrast fentanyl and ketamine using the following headings:

- mechanism of action (20% of marks),
- pharmacokinetics relevant to the intravenous administration in intensive care (40% of marks),
- pharmacodynamics and adverse effects (40% of marks).

Question 10

Compare and contrast the pharmacodynamics of haloperidol, olanzapine, and quetiapine, relevant to their use in intensive care, using the following headings:

- primary mechanism of action (25% of marks).
- extrapyramidal side effects (15% of marks).
- other receptor mediated effects (30% of marks).
- cardiac toxicity (15% of marks).
- idiosyncratic adverse effects (15% of marks).

----- END OF SHORT ANSWER QUESTIONS FOR MORNING PAPER -----