

DEPARTMENT OF PHYSIOLOGY
GRANT GOVERNMENT MEDICAL COLLEGE, MUMBAI
First M.B.B.S Second Internal Assessment Examination (2024-2025 Batch)

Date-16/04/2025

Time- 10.00 am to 1.00 pm

Marks-100

Instructions:

1. Draw neat labelled diagrams wherever necessary.
2. Figures to the right indicate marks.
3. All questions are compulsory unless indicated.

SECTION - B

Q.2. LONG ANSWER QUESTION :

12 M x 1 = 12 MARKS

- a) Describe the mechanism of action, physiological functions and regulation of secretion of glucocorticoids. Add a note on Cushing's syndrome. (2+6+2+2)

Q.3. SHORT ANSWER QUESTIONS:

4 M x 5 = 20 MARKS

- a) How cardiac output & blood pressure are maintained during non progressive stage of circulatory shock?
- b) Explain how body temperature is maintained in hot environment?
- c) Explain the action of parathormone on bone for maintaining Calcium homeostasis.
- d) Classify reflexes. Enumerate the properties of reflex action.
- e) What are the responsibilities of a patient?

Q.4 SHORT ANSWER QUESTIONS (ANY 4 OUT OF 5):

5 M x 4 = 20 MARKS

- a) A 55 year old male patient from corporate section with sedentary lifestyle and history of smoking has come to casualty with the complaints of severe chest pain radiating to left arm & profuse sweating. On duty doctor advised ECG. ECG showed ST segment elevation.
 1. What could be the probable diagnosis?
 2. Give the cause of ST elevation in ECG.
 3. What life style modifications will you advise to the above subject? (1+2+2)

- b) A 35 year old female patient with swollen neck came to the OPD with complaints of nervousness, weakness, and palpitations on exertion for past 8 months. Recently she noticed excessive sweating, protrusion of eyeballs & less bleeding during menstrual periods. History of weight loss was also given.

Lab findings:

Free T3 - 5 pg/ml (normal 2.3 - 4.2 pg/ml)

Free T4 - 5.6 ng/ml (normal 0.8 - 1.8 ng/ml)

TSH - < 0.01 (normal 0.35-4.5 mIU/L)

1. What could be the likely diagnosis?
2. Explain the pathophysiology of the above condition.
3. What will be the medical line of treatment? (1+2+2)

- c) A 70 year old male patient presenting with the complaints of tremors at rest, difficulty in buttoning the shirt, difficulty in swallowing, fatigue & postural instability leading to poor balance & history of falls.
1. What is the most likely diagnosis?
 2. What is the pathophysiology of the above disorder?
 3. Give the physiological basis of treatment.
- (1+2+2)
- d) A 50 year old obese male patient presenting with the complaints of fatigue, excessive thirst & frequent urination, non healing small cuts or ulcers. Blood reports were showing fasting blood glucose 150 mg/100 ml & post prandial 250 mg/100 ml.
1. What is the most probable diagnosis?
 2. What other diagnostic tests you will advise in this patient?
 3. Write a note on metabolic syndrome.
- (1+2+2)
- e) A 12 year old school girl comes to ophthalmic OPD with complaints of difficulty in reading from black board when she is seated on last bench accompanied with watering of eyes & on and off headache.
1. Which type of refractive error could be there in the above subject?
 2. What is the pathophysiology of this condition?
 3. What is the correction used for this condition?
 4. Enumerate other refractive errors.
- (1+2+1+1)

Q.5 SHORT ANSWER QUESTIONS (ANY 4 OUT OF 5):

7M x 4 = 28 MARKS

- a) Write in detail the origin and spread of cardiac impulse.
Add a note on A-V nodal delay. (2+3+2)
- b) Write a note on dark adaptation with its clinical implication.
- c) What are various cardiovascular adjustments during Moderate exercise?
Add a note on VO₂ max. (5+2)
(3+4)
- d) Describe the connections & functions of cerebellum.
- e) Describe the origin, course & termination of Dorsal column pathway.
Add a note on sensations carried by dorsal column pathway. (5+2)