

GATE 2026 Biomedical Engineering Question Paper

Time Allowed :3 Hours | Maximum Marks :100 | Total Questions :65

General Instructions

Read the following instructions very carefully and strictly follow them:

1. Each GATE 2024 paper consists of a total of 100 marks. The examination is divided into two sections – General Aptitude (GA) and the Candidate's Selected Subjects. General Aptitude carries 15 marks, while the remaining 85 marks are dedicated to the candidate's chosen test paper syllabus.
2. GATE 2024 will be conducted in English as a Computer Based Test (CBT) at select centres in select cities. The duration of the examination is 3 hours.
3. MCQs carry 1 mark or 2 marks.
4. For a wrong answer in a 1-mark MCQ, $\frac{1}{3}$ mark is deducted.
5. For a wrong answer in a 2-mark MCQ, $\frac{2}{3}$ mark is deducted.
6. No negative marking for wrong answers in MSQ or NAT questions.

1. In the human pancreas, which cell types secrete insulin and glucagon?

(A) Alpha cells and delta cells, respectively
(B) Beta cells and delta cells, respectively
(C) Alpha cells and beta cells, respectively
(D) Beta cells and alpha cells, respectively

2. At time t , the cardiac dipole is oriented at -45° (minus forty five degrees) to the horizontal axis. The magnitude of the dipole is 3 mV. Assuming Einthoven frontal plane configuration, what is the magnitude (in mV) of the electrical signal in lead II? (Round off the answer to two decimal places.)

3. For a tissue with Young's modulus 4 kPa and shear modulus 1.5 kPa, what is the value of the Poisson's ratio?

(A) $\frac{1}{4}$
(B) $\frac{1}{5}$
(C) $\frac{1}{2}$
(D) $\frac{1}{3}$

4. Consider two cuboidal blocks of volume 1 cm^3 each, one made of gold and the other of undoped silicon. What will happen to the resistivity of these blocks if the temperature is increased from 300 K to 350 K? Choose one of the following.

- (A) Resistivity of gold increases and undoped silicon decreases
- (B) Resistivity of gold decreases and undoped silicon increases
- (C) Resistivity of gold remains same and undoped silicon increases
- (D) Resistivity of gold decreases and undoped silicon remains same

5. Cerebrospinal fluid in humans is present in the _____ space.

- (A) subdural
- (B) subarachnoid
- (C) epidural
- (D) pericardial
