

**B.Sc. 4<sup>th</sup> Semester (Honours) Examination, 2022**

**PHYSIOLOGY**

**Course ID: 42515**

**Paper: SH/PHY/405/SEC-2(T)**

**Course Title: Pathological Microbiology and Bio-Medical Technology**

**Time: 2 Hours**

**Full Marks: 40**

*The figures in the margin indicate full marks.*

*Candidates are required to give their answers in their own words as far as practicable.*

**1. Answer any five questions from the followings: 2×5=10**

- (a) What is sterilization?
- (b) Write briefly the composition of cell wall of Gram-positive bacteria.
- (c) State the two differences of spectrophotometer and colorimeter.
- (d) What is the significance of alcohol wash during Gram staining?
- (e) Why heat fixation is necessary before Gram staining?
- (f) Mention the position of standard limb leads of ECG recording.
- (g) What do you mean by ST segment?
- (h) Write any two abnormalities of ECG recording.

**2. Answer any four questions from the followings: 5×4=20**

- (a) Write the principle and use of colorimeter in the laboratory. 2+3
- (b) Mention the principle and use of spectrophotometer. 3+2
- (c) What is the importance of mordant? Write the difference between Gram positive and Gram negative bacteria. 2+3
- (d) Briefly describe the Beer-Lambert's law. 5
- (e) Write the principle and application of Doctor's centrifuge machine. 3+2
- (f) Mention the principle and location of chest leads in ECG recording. 3+2

**3. Answer any one question from the followings: 10×1=10**

- (a) Discuss about the principle and procedure of Gram staining method. Draw a labeled diagram showing Gram positive and Gram negative bacteria. 3+5+2
- (b) Write the procedure of sputum collection for identification of tubercular bacteria. Describe the application of spectrophotometer. 5+5