



## BRAINWARE UNIVERSITY

Term End Examination 2023-2024

Programme – BBA(HM)-2021

Course Name – Biomedical Equipment Management

Course Code - BBAHMC602

( Semester VI )

Full Marks : 60

Time : 2:30 Hours

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

### Group-A

(Multiple Choice Type Question)

1 x 15=15

1. Choose the correct alternative from the following :

- (i) What does MRI stand for?
- a) Magnetic Resonance Investigation                      b) Magnetic Resonance Imaging  
c) Magnetic Radiation Imaging                              d) Magnetic Resonance Inspection
- (ii) During cardiopulmonary bypass, which vessel is typically cannulated to divert blood flow through the heart-lung machine?
- a) Pulmonary artery    b) Aorta  
c) Superior vena cava    d) Inferior vena cava
- (iii) Select the type of cardiography testing that uses sound waves to create images of the heart
- a) Electrocardiography    b) Echocardiography  
c) Angiography    d) Magnetic Resonance Imaging (MRI)
- (iv) Select the full form of PFT from the following
- a) Pulmonary Function Test    b) Progressive Functional Training  
c) Personal Fitness Tracker    d) Pneumonia-Free Therapy
- (v) Which method of sterilization utilizes high-pressure steam to kill microorganisms?
- a) Ethylene oxide sterilization    b) Autoclaving  
c) Radiation sterilization    d) Chemical sterilization
- (vi) Summarize the primary purpose of the ergonomic features of biomedical equipment
- a) To assess market competition    b) To increase procurement complexity  
c) To facilitate user comfort and safety    d) To limit the number of available options
- (vii) Relate the factor, that not require in the time of evaluation for equipment selection
- a) suitability    b) lead time  
c) cost    d) size of the material
- (viii) Outline the minimum number of days in Buy Back policy
- a) 16    b) 12  
c) 13    d) 15

- (ix) Outline the factor that influences equipment replacement.
- a) Demand for more number of equipment      b) frequent maintenance  
c) Advanced Technology                              d) all of these
- (x) outline the full form of ISO in providing standards (Indian) to medical equipment.
- a) Indian Organization for Standardization      b) International Organization for Standardization  
c) International Organization for Standards      d) None of these
- (xi) Select the maintenance type that relies on real-time data from sensor devices to predict potential failures from the following options
- a) Corrective Maintenance                              b) Predetermined Maintenance  
c) Predictive Maintenance                              d) Condition-Based Maintenance
- (xii) Choose practices that improve the equipment maintenance from the following options.
- a) Correct use    b) Lubrication  
c) Timely cleaning                                      d) All of these
- (xiii) Select the factor that decreases in the value of equipment over time due to various factors such as wear and tear, obsolescence, damage, and loss.
- a) Depreciation    b) Equipment Efficiency Loss  
c) Casualty Value                                        d) Useful Life
- (xiv) Identify the factor that does NOT affect equipment loss of value.
- a) Initial Cost    b) Residual Value  
c) Brand popularity                                      d) Technological Obsolescence
- (xv) Outline the depreciation year for a computer machine used in a hospital
- a) 3 yrs    b) 5 yrs  
c) 2 yrs    d) 1yr

**Group-B**

(Short Answer Type Questions)

3 x 5=15

2. State three functions of using an ECG machine (3)  
3. List down the functions of infusion pump. (3)  
4. Explain the challenges faced during the process of biomedical equipment planning (3)  
5. Develop your opinion on the importance of assessing site conditions before equipment installation. (3)  
6. Explain the Purchasing procedure of a healthcare equipment (3)

**OR**

Discuss the principles of efficient Equipment Planning (3)

**Group-C**

(Long Answer Type Questions)

5 x 6=30

7. How is Computed Tomography Scan different from Magnetic Resonance Imaging? (5)  
8. Develop the consequences of poor maintenance in organizations and how they can impact productivity and cost. (5)  
9. Apply the maintenance concept that contributes to improving safety in the workplace, providing examples where necessary. (5)  
10. Explain WHO guidelines laid on equipment selection. (5)  
11. Classify various features of equipment maintenance service, a hospital performs regularly. (5)  
12. Develop the key steps involved in preparing a site for equipment installation and the significance of each step in ensuring a successful installation process. (5)

**OR**

Apply the concept of predictive maintenance and its significance in modern maintenance systems. (5)