

# Question Paper

Exam Date & Time: 25-Jun-2024 (10:00 AM - 12:00 PM)



## MANIPAL ACADEMY OF HIGHER EDUCATION

**FOURTH SEMESTER M.Sc. PERFUSION TECHNOLOGY DEGREE EXAMINATION - JUNE 2024**  
**SUBJECT: PFT6022 - MECHANICAL CIRCULATORY SUPPORT DEVICES FOR HEART FAILURE**  
**(2021 SCHEME)**

**Marks: 50**

**Duration: 120 mins.**

**Answer all the questions.**

**Draw Diagrams wherever Appropriate.**

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| 1)  | Explain in detail veno-venous ECMO and add a note on the components of ECMO.           | (20) |
| 2A) | Elaborate on the working principle of the Total Artificial Heart.                      | (10) |
| 2B) | List out and explain adverse events of mechanical circulatory support devices.         | (10) |
| 3A) | Explain in detail the indications and contraindications of Ventricular Assist Devices. | (5)  |
| 3B) | Compare the difference between CF- rotary pumps and Native Heart.                      | (5)  |

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