

**BACHELOR OF SCIENCE (CARDIOVASCULAR TECHNOLOGY) (CBCS - 2020 COURSE)**

**B. Sc. (Cardiovascular Technology) Sem - IV :SUMMER- 2022  
SUBJECT : BASIC ECHOCARDIOGRAPHY (ECG)**

Day : Monday  
Date : 25-07-2022

**S-23356-2022**

Time : 10:00 AM-12:00 PM  
Max. Marks : **20**

**N. B. :**

- 1) There are three sections as:  
Section – A = Objective Type Questions - 20 Marks.  
Section – B = Long Answer Questions - 20 Marks.  
Section – C = Short Answer Questions - 20 Marks.
- 2) Section A is given in **SEPARATE** sheet and has to be answered on same sheet. This sheet should be completed with the first 20 minutes of starting of the examination. This sheet with Section – A only will be collected by Supervisor.
- 3) Section – B has four long questions and **ANY TWO** questions have to be answered.
- 4) Section – C has six long questions and **ANY FOUR** questions have to be answered.
- 5) You have to make  $\surd$  such kind of mark in the box of the appropriate answers.

Seat No: \_\_\_\_\_

Total marks obtained: \_\_\_\_\_

Signature on Examiner: \_\_\_\_\_

Signature of Invigilator: \_\_\_\_\_

**MCQs:**

**Q. 1** Choose correct echo features of marfan's syndrome:

- a)  Mitral valve prolapse
- b)  Aortic valve disease
- c)  Aortic dissection
- d)  All of above

**Q. 2** Normal E:A ration is:

- a)   $> 1$
- b)   $> 2$
- c)   $< 1.5$
- d)   $< 1$

**Q. 3** Normal LV internal end systolic volume is:

- a)   $85 \pm 15$  ml
- b)  30 to 45 %
- c)  55 to 60 %
- d)   $35 \pm 5$  ml

**Q. 4** Choose incorrect cause of Tricuspid valve regurgitation:

- a)  Tricuspid valve prolapse
- b)  Ebstein's anomaly
- c)  Flail tricuspid leaflet
- d)  Right ventricle dilatation

**P. T. O.**

- Q. 5 Which is not echocardiographic feature of restrictive cardiomyopathy?
- a)  Small LV cavity
  - b)  RV enlargement with small LV cavity
  - c)  Bi-atrial enlargement
  - d)  Normal to depressed systolic function of LV
- Q. 6 Choose incorrect cause of LA dilatation:
- a)  Mitral Regurgitation
  - b)  LV failure
  - c)  Long standing Atrial fibrillation
  - d)  Mitral valve vegetation
- Q. 7 Anatomically which of the following valve is anteriorly placed?
- a)  Tricuspid valve
  - b)  Bicuspid valve
  - c)  Aortic valve
  - d)  Pulmonary valve
- Q. 8 Least common valve involvement in rheumatic heart disease:
- a)  Tricuspid valve
  - b)  Pulmonary valve
  - c)  Bicuspid valve
  - d)  Aortic valve
- Q. 9 Assessment of Mitral regurgitation by colour flow mapping. Choose correct sentence.
- a)  Mild MR – LA area < 25 % filling
  - b)  Moderate MR – LA area > 50 % filling
  - c)  Severe MR – LA area > 80 % filling
  - d)  Severe MR – Jet area < 8 cm<sup>2</sup>
- Q. 10 Choose correct answer:
- a)  Continuous wave measures abnormal flow pattern and high velocities without upper limit:
  - b)  Continuous wave is useful to see gradient in LVOT.
  - c)  Continuous wave measures higher velocities with upper limit 200 m/s.
  - d)  Continuous wave measures high velocities in specific area without upper limit.

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Date :

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Section – C = Short Answer Questions - 20 Marks.
- 2) Section – B has four long questions and **ANY TWO** questions have to be answered.
- 3) Section – C has six long questions and **ANY FOUR** questions have to be answered.
- 4) Answers to both the sections should be written in **SAME** answer book.

**SECTION – B**

Long answer (Attempt **ANY TWO**) (20)

- Q. 1** Define ventricular septal defect. Write its types with labelled diagram.
- Q. 2** What is pulmonary thromboembolism? Write echocardiographic assessment of pulmonary thromboembolism.
- Q. 3** Define mitral valve stenosis. Write its causes, symptoms and treatment. Draw diagram of normal and stenotic mitral valve.

**SECTION – C**

Short answer (Attempt **ANY FOUR**) (20)

- Q. 4** Echo assessment of normal IV systolic and diastolic function.
- Q. 5** Echo features of mitral regurgitation. Write its causes and treatment.
- Q. 6** Define restrictive cardiomyopathy. Write echo features.
- Q. 7** Define HCM and HOCM. Write echo features.
- Q. 8** Define of congenital heart disease. Write its types. Define any two types.
- Q.9** Write difference between continuous wave and pulsed wave Doppler.

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