

**Bankura Christian College  
Department of Physiology**

**2<sup>nd</sup>YEAR: SEMESTER-III (Academic Session: 2023-24)**

**Course Code: SH/PHY/302/C-6**

**Course ID: 32512**

**Credit- 02; Full Marks: 35**

**Classes: 12 (Lecture) + 02 (Class test/Revision)**

**Course Title: Circulation, Dr Rajkumar Maiti**

***Course Learning Outcomes:***

1. Student will be able to learn about structure and function of cardiovascular system.
2. From this course learners will gather knowledge about origin and spread of cardiac impulse along with properties of cardiac muscle.
3. This core paper will enrich our students about hemodynamics and blood pressure.
4. From this core course learner will gain their knowledge about different regional circulation with peculiarities.

**Topics allotted**

**The Heart as a Pump**

1. Introduction
2. Mechanical events of the cardiac cycle, heart sound, volume and pressure change.
3. Cardiac Output - Definition, types, factors affecting, regulation and measurement.

**Dynamics of Blood and Lymph Flow**

1. Introduction
2. Anatomic and biophysical considerations of
  - (a) Arterial and arteriolar circulation. (b) Capillary circulation.
  - (c) Lymphatic circulation and interstitial fluid volume.
  - (d) Venous circulation.
3. Blood Pressure – Definition, types, measurement and regulation.

MONTH/YEAR	WEEK	PORTIONS
<b>August 2023</b>	3	Introduction to the heart as a pump.
	4	Mechanical events of the atrial cycle during cardiac cycle (Class-1)
	5	Mechanical events of the ventricular cycle during cardiac cycle (Class-2)
MONTH/YEAR	WEEK	PORTIONS
<b>September 2023</b>	1	Heart sound: Cause and their significances. Abnormal heart sound.
	2	Volume and pressure change of heart
	3	Cardiac Output - Definition, types, factors affecting cardiac output (Class-1)
	4	Regulation and determination of cardiac output by Fick's principle (Class-2)
MONTH/YEAR	WEEK	PORTIONS
<b>October 2023</b>	1	<b>Class test on cardiac cycle and cardiac output</b>
	2	Anatomic and biophysical considerations of arterial and arteriolar circulation
MONTH/YEAR	WEEK	PORTIONS
<b>November 2023</b>	1	Capillary circulation and venous circulation along with their peculiarities
	2	Lymphatic circulation and interstitial fluid volume along with peculiarities
	3	Blood Pressure – Definition, types and measurement (Class-1)
	4	Regulation of blood pressure(Class-2)
MONTH/YEAR	WEEK	PORTIONS
<b>December 2023</b>	1	<b>Class test on circulation and blood pressure</b>

**Suggested Books** 1. Mahapatra, A.B.S.M. (2011). Essentials of Medical Physiology Practical. First Edition. Current Books International'.

2. Hall J.E. (2016). Guyton & Hall Textbook of Medical Physiology. Second South Asia Edition.

3. Sembulingam K. and Sembulingam, P. (2016). Essentials of Medical Physiology 7<sup>th</sup> Edition. Jaypee.

4. Khurana I. (2015). Medical Physiology. 2<sup>nd</sup> Edition. Elsevier India.

5. Chatterjee C.C. (2016). Human Physiology Volume 1. Eleventh Edition. CBS. Publishers and Distributors Pvt. Ltd.

6. Basak A .K. (2016). Textbook of Physiology for BDS. New Central Book Agency (P) Ltd. 3<sup>rd</sup> Edition.

*Rajkumar Maiti*