

SVKM'S NMIMS

**Shobhaben Pratapbhai Patel / School of Pharmacy & Technology
Management**

Programme: B. Pharm / B. Pharm + MBA

Year: I

Semester: I

Academic Year: 2019-20

Marks: 75

Subject: Human Anatomy and Physiology I - Theory

Time: 10.00 am to 1.00pm

Date: 09 December 2019

No. of pgs: 4

Duration: 3 hrs.

FINAL EXAMINATION

Instructions: Candidates should read carefully the instructions printed on the question paper and on the cover of the Answer Book, which is provided for their use.

- 1) Question No. 1 is compulsory (10 questions of 2 marks each)
- 2) Question No. 2 will have 3 questions, 10 marks each (answer 2 out of 3)
- 3) Question No. 3 will have 9 questions, 5 marks each (answer 7 out of 9)
- 4) Candidates are requested to attempt all questions as specified above
- 5) Answer to new question to be started on fresh page
- 5) Figures in brackets on the right hand side indicate full marks
- 6) Assume suitable data if necessary

Compulsory Questions

Attempt all questions

1 a Fill in the blanks with the term that fits the description from the choices given below. 2

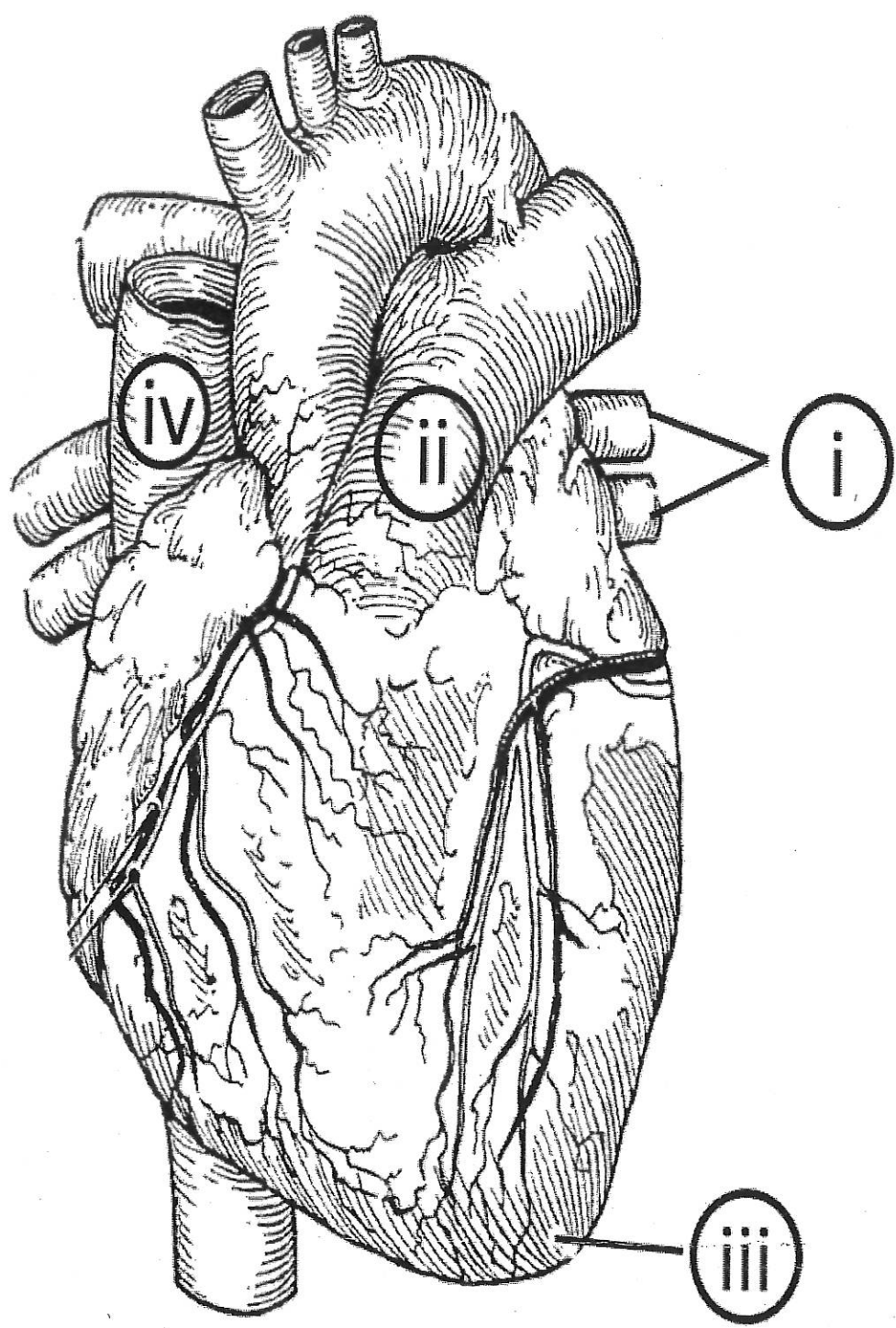
Cardiac Output, Heart rate, Stroke volume, cardiac cycle, Cardiac reserve, afterload

The amount of blood ejected by ventricle during each systole is A while the difference between maximum cardiac output and cardiac output in resting state is known as B.

1 b What is the composition of thick filaments in the sarcomere? Do the lengths of the thick and thin filaments change during constriction? 2

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- 1 c Differentiate between Basophil and Eosinophil 2
- 1 d The neurotransmitter and receptor of parasympathetic nervous system present at effector/end organ areand 2
- 1 e The Transverse Plane divide the body into _____ and _____ portions. Fill in the gaps. 2
- 1 f Transformation reaction of retinal in rods due to presence of light is called asreaction and separation of trans retinal from opsin called as reaction. 2
- 1 g Macrophages develops fromand plasma cells develops fromcirculating blood cells 2
- 1 h Identify each of the numbered structures from the choices given below. 2
- Right atrium, Right ventricle, Base of the heart, Superior vena cava, Apex of heart, Left pulmonary veins, Pulmonary trunk, Left atrium**



Anterior view of human heart

- 1 i Which.....ions diffuse from the sarcoplasmic reticulum into the sarcoplasm and bind to..... protein of actin filament. 2
- 1 j What do you understand by H-Zone and I-Band in the sarcomere? 2

Long questions

3/4

Attempt any TWO.

- 2 a Mr. X is a kidney failure patient and suffering from anaemia. What is the reason of his anaemia? Describe the detailed pathway of Hemoglobin synthesis and recycling. 10
- 2 b Describe the general features of connective tissue. How are connective tissues classified? List the location and functions of various types connective tissue. 10
- 2 c In a late evening of cold season, a person was murdered in the park. Mr. X was walking near to the site only, still he could not see the colour of dress murderer was wearing. He reported that it was a very dim light so I could not identify the colour. Judge was not believing him. Justify that Mr. X is right. Discuss in detail about the physiology of vision. 10

Short Questions

Attempt any SEVEN.

- 3 a Elaborate on the structure and functions of human skin with suitable diagram. 5
- 3 b While diagnosis of tuberculosis in Mr. Y, Doctor found tenderness in lymph node. State the role of lymph nodes in tuberculosis. Draw a well labelled diagram of it. 5
- 3 c Give the Summary of Structural and Functional Classifications of Joints. 5
- 3 d Why there is need for blood groups matching before blood transfusion? 5
- 3 e Elaborate on membrane potential changes that occur during generation of ventricular action potential with help of a neat diagram. Also, discuss specialized electrical conduction system of a healthy heart. 5
- 3 f Enlist eleven systems of the human body and discuss any three human body system. 5
- 3 g Mr. X was highly stressed due to inability to complete his work in given deadlines. He was drinking lot of water as his mouth and throat was getting dry. Explain the reason of dryness of his mouth? State any four effect of sympathetic innervation on digestive system. 5
- 3 h What are the structural and functional differences between the epidermis and dermis? 5
- 3 i Discuss the operation of the sodium-potassium pump in active transport mechanisms? 5