Register Number:……..

KUMARAGURU
college of technology
character is life

B.TECH DEGREE EXAMINATIONS: APRIL / MAY 2023

(Regulation 2018)

Seventh Semester

BIOTECHNOLOGY

U18BTE0013: Human Physiology & Allied Diseases

COURSE OUTCOMES

CO1: Describe the digestion and absorption physiology, and to evaluate the pathophysiological conditions.

CO2: Understand, elaborate and interpret the functioning of cardiac cycle, mechanism of regulation of blood pressure, and allied pathophysiology.

CO3: Demonstrate the physiological and pathophysiological processes of renal and respiratory systems.

CO4: Discuss the phenomenon of conduction of nerve impulses and interpret the mechanism of Parkinson's disease.

CO5: Understand and illustrate the physiological phases of spermatogenesis and menstrual cycle, and explain the etiology of menopause.

CO6: Analyze and interpret the clinical oriented diagnostic results of selected diseases.

Time: Three Hours **Maximum Marks: 100**

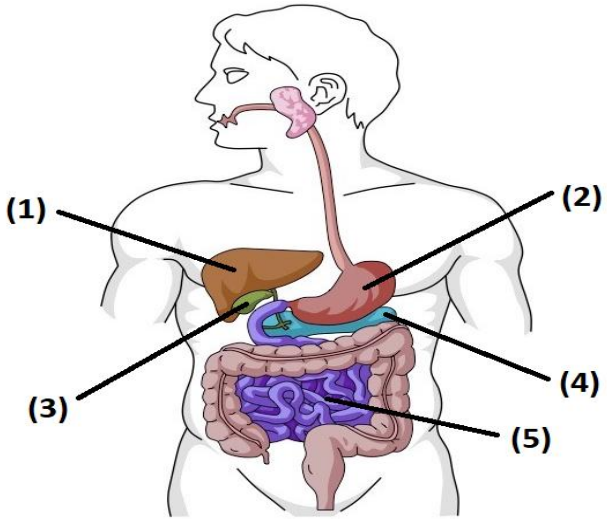
Answer all the Questions:-

PART A (10 x 2 = 20 Marks)

(Answer not more than 40 words)

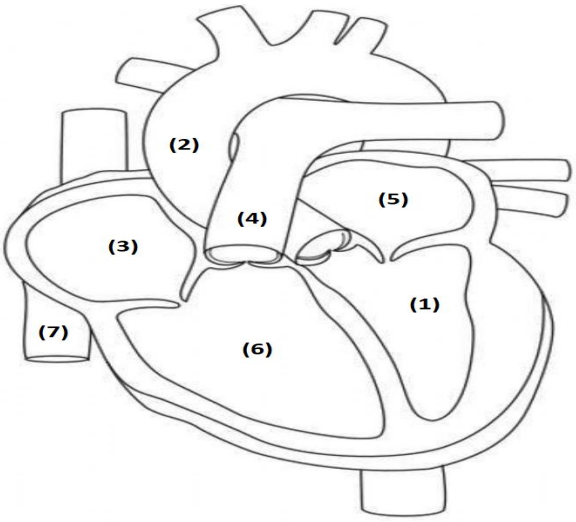
1. List the major and minor salivary glands. CO1 [K_2]

2. Observe the outline of human digestive system, and identify and write the major organ(s) that significantly aids the lipid digestion. CO1 [K_3]

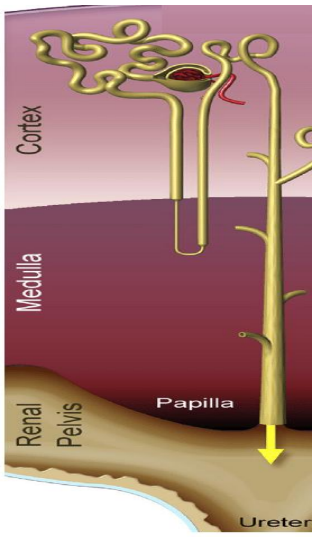


3. What factors are responsible to increase an arterial blood pressure? CO2 [K_2]

4. Observe the shown diagram of a heart and arrange the blood flow order from the entry point to the exit point. CO2 [K_4]

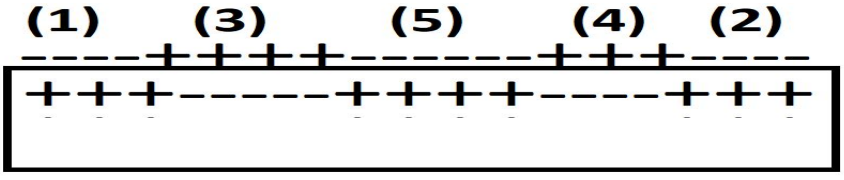


5. Observe the depicted image and write the type of the nephron. CO3 [K_2]



6. Outline the importance of pulmonary circulatory process. CO3 [K_2]

7. Identify the resting potential area of the below depicted neuron. CO4 [K_4]



8. Subclassify the peripheral nervous system. CO4 [K_2]

9. Write the significant contribution of Sertoli cell in the spermatogenesis process. CO5 [K_3]

10. What is the prescribed normal blood glucose range for fasting and post prandial conditions? CO6 [K_2]

Answer any FIVE Questions:-
PART B (5 x 16 = 80 Marks)
(Answer not more than 400 words)

11.	a)	Describe in detail the composition of pancreatic juice and comment its digestive functions.	(12)	CO1	[K_2]
	b)	Which disease is majorly contracted due to the infection of *H. pylori*? Write a short note on its pathophysiology.	(4)	CO1	[K_3]
12.	a)	Elaborate in detail the cardiac cycle with appropriate steps.	(12)	CO2	[K_2]
	b)	Outline the properties of blood.	(4)	CO2	[K_2]
13.	a)	Describe the mechanism of formation of urine with appropriate stages.	(12)	CO3	[K_2]
	b)	How can a *Mycobacterium tuberculosis* interact with a human system?	(4)	CO3	[K_3]
14.	a)	Draw and explain the structural features, and the functions of a neuron.	(12)	CO4	[K_2]
	b)	What is "All or none" principle?	(4)	CO4	[K_2]
15.	a)	Elaborate the various phases that influence the changes in the uterus with appropriate stages of menstrual cycle.	(12)	CO5	[K_2]
	b)	List few functions of testosterone.	(4)	CO5	[K_2]
16.	a)	Assume that a serum sample is observed with a positive result for VD Bergh direct reaction. What will be your interpretation? Also, explain other related biochemical tests to confirm your interpretation.	(12)	CO6	[K_5]
	b)	A set of individuals are tested for PT and their results is tabulated. Calculate the INR and identify the individuals suffering from cardiac ailments. (if any) (**Hint:** Normal PT = 12 sec; ISI = 2.0)	(4)	CO6	[K_4]

Population	Results of PT (in secs)
Person 1	26
Person 2	14
Person 3	16
Person 4	11
Person 5	30

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