(Deemed University)

M.Sc (PRELIMINARY) DEGREE EXAMINATION – JULY 2002

PAPER I: ANATOMY Monday, July 01, 2002

	5.555.5						
Tin	Time available: 3 Hours Maximum Marks: 10						
* *	Answer ALL the questions. Illustrate your answers with neatly drawn and correctly labell appropriate.	ed diagrams whereve					
1.	Describe the bronchopulmonary segments. Add a note on their applied	importance. (15 Marks					
2.	Describe the parts and relations of the duodenum. Add a note on its m	icroscopic structure. (15 Marks					
	Write short notes on each of the following: Spermiogenesis Styloid process Chorionic villi Mylohyoid muscle	$(4 \times 5 = 20 \text{ Marks})$					
4.	Describe the submandibular salivary gland. Add a note on its applied as	spects. (15 Marks					
5.	Describe the prostate gland. Add a note on age changes.	(15 Marks					
6. 6A. 6B. 6C.	Write short notes on each of the following: Macrophage Circumvallate Papillae Facial artery	$(4 \times 5 = 20 \text{ Marks})$					

6D. Microscopic structure of spleen

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M.Sc (PRELIMINARY) DEGREE EXAMINATION – JULY 2002

PAPER II: PHYSIOLOGY Tuesday, July 02, 2002

Illustrate your answers with neatly drawn and correctly labelled diagrams wherever

Time available: 3 Hours

appropriate.

Answer all the questions.

	appropriate.						
1A.	Draw pyramidal pathways from origin to termination. Explain their functions.						
	(4+2 = 6 marks)						
1B.	Mention the effects of interruption to these pathways at internal capsule.						
	(4 marks)						
2A.	Name the receptors which sense:						
	i) Position of head in space ii) Angular rotation of head						
	Mention the effect of stimulation of these receptors.						
	(2+3 = 5 marks)						
2B.	Explain the role of cochlea in hearing.						
	(5 marks)						
3.	Explain the Wallerian degeneration of nerve fibres. Mention the factors that influence regeneration of nerve fibres.						
	(3+2=5 marks)						

4B. Name the blood group antigens and their corresponding antibodies. Mention the effects of blood group antigen-antibody reaction.

(3+2 = 5 marks)

(3+2 = 5 marks)

Maximum Marks: 100

5A. Name the determinants of cardiac output. How are they affected in exercise?

4A. Outline the steps of phagocytosis. What is "mononuclear phagocytic system"?

(2+3 = 5 marks)

5B. State "Poiseuille's" formula. Based on this, explain the factors that determine the blood flow to organ.

(2+3 = 5 marks)

5C. Explain the principle of Electrocardiography. Name the lead systems used in recording E.C.G.

(2+3 = 5 marks)

6A.	Where are respiratory centers located? Mention their function in							
	 i. normal respiratory activity iii. metabolic acidosis ii. hypoxia 							
	(1+2+1+1=5 marks)							
6B.	Explain the forces which expand the lungs during inspiration. What causes the normal expiration?							
	(3+2=5 marks)							
	(3+2=3 Intarks)							
7A.	Explain the second stage of deglutition.							
	(5 marks)							
7B.	List the functions of the different constituents of gastric juice. Mention the role of gastrin in gastric function.							
	(3+2=5 marks)							
	(3+2-3) Hidi ks)							
8A.	Explain the process of glomerular filtration.							
	(5 marks)							
8B.	Draw and label the micturition reflex arc. Mention how in adults, micturition is voluntary.							
	(3+2 = 5 marks)							
	(312-3) marks)							
9A.	Describe the features of 'Cushing syndrome'.							
	(5 marks)							

9B. Give a flow chart to show the fate of absorbed glucose. At what points hormones act to keep the blood glucose constant?
(5 marks)

9C. Outline the synthesis of thyroxine.

(5 marks)

10. Mention the site, steps and factors necessary for spermatogenesis.

(1+2+2 = 5 marks)

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M.Sc (PRELIMINARY) DEGREE EXAMINATION – JULY 2002

PAPER III: BIOCHEMISTRY

Wednesday, July 03, 2002

Tim	e available: 3 Hours	Maximum Marks: 100
•	Illustrate your answers with neatly drawn and correctly lab appropriate.	elled diagrams wherever
1.	Describe the process of replication and transcription of DNA.	
1.	Describe the process of replication and transcription of DIVA.	(15 marks)
		(13 marks)
2.	Write briefly on following:	
	with streng on rollowing.	$(5 \times 7 = 35 \text{ Marks})$
2A.	Role of lung and kidney in acid base balance	(6 11 20 11 2
2B.	Lactose intolerance	
2C.	Lipid classification with one example for each	
2D.	Role of vit D in serum calcium level regulation	
2E.	Diagnostic enzymes	
2F.	Function of copper and zinc	
2G.	Jaundice	
3.	Discuss the complete aerobic oxidation of glucose in body.	
		(15 Marks)
4.	Give brief and precise answer to the following:	
		$(5 \times 7 = 35 \text{ marks})$
4A.	Fatty acid synthase complex.	
4B.	Tertiary and quaternary structure of proteins.	
4C.	Tumor markers	
4D.	Important compounds formed from tyrosine	
4E.	Lipoproteins	
4F.	Chemiosmotic theory	
4G.	Energetics of oxidation of palmitic acid	

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M.Sc. (PRELIMINARY) DEGREE EXAMINATION – DECEMBER 2002

PAPER I: ANATOMY Monday, December 02, 2002

Time available: 3 Hours Maximum M					
*	Answer ALL the questions. Illustrate your answers with neatly drawn and correctly labelle appropriate.	ed diagrams wherever			
1.	Describe the right atrium of heart.	(15 Marks)			
2.	Describe the parts, relations and blood supply of pancreas.	(15 Marks)			
3C.	Write short notes on each of the following: Fertilization Mastoid process Deep facial vein Amnion.	$(4 \times 5 = 20 \text{ Marks})$			
4.	Describe the palatine tonsil. Add a note on its microscopic structure.	(15 Marks)			
5.	Describe supports of the uterus. Add a note on development of uterus.	(15 Marks)			
6. 6A.	Write short notes on each of the following: Microscopic structure of aorta.	$(4 \times 5 = 20 \text{ Marks})$			

6C. Epicranial aponeurosis6D. Hyaline cartilage.

M.Sc (PRELIMINARY) DEGREE EXAMINATION – DECEMBER 2002

PAPER II: PHYSIOLOGY Tuesday, December 03, 2002

Time available: 3 Hours	Maximum Marks:	100
		_

- Answer all the questions.
- Illustrate your answers with neatly drawn and correctly labelled diagrams wherever appropriate.
- Define blood pressure giving normal values. Explain the importance of keeping mean arterial blood pressure constant. Describe the role of baroreceptors and hormones in regulating blood pressure.

(2+2+6=10 marks)

2A. List the properties of cardiac muscle. Explain any one of them.

(2+3=5 marks)

2B. Name the proprioceptors. Draw a diagram to show the pathway for conscious kinaesthetic sensation.

(2+3=5 marks)

- 2C. Explain/define the following:
 - i) Presynaptic inhibition
 - ii) Referred pain
 - iii) Stereognosis
 - iv) Withdrawal reflex

(5 marks)

2D. Outline the formtion, circulation and functions of CSF.

(5 marks)

2E. Draw and define a motor unit. Explain how quantal summation is brought about.

(2+3=5 marks)

2F. Name the photoreceptors. Explain the functions of each.

(1+4=5 marks)

2G. Briefly explain the functions of lymphocytes.

(5 marks)

2H. Describe the functions of plasma albumin.

(5 marks)

3. Give an account of uptake, transport and delivery of oxygen to the tissues.

(4+2+4=10 marks)

4A. List four functions of the placenta. Explain any one of them. (2+3=5 marks)4B. Name four features of cretinism. Explain their basis. (2+3=5 marks)4C. Name the hormones secreted by the adrenal medulla. Compare their action on CVS. (1+4=5 marks)4D. List any four hyperglycemic hormones. Explain the hyperglycemic actions of any two of them. (2+3=5 marks)4E. Define micturition. Draw a labelled diagram of micturition reflex arc. (1+4=5 marks)Enumerate the functions of skin. Explain any one. (2+3=5 marks)

4G. Enumerate the constituents of pancreatic juice. Describe the hormonal regulation of pancreatic juice.

(2+3=5 marks)

4H. Explain the regulation of cephalic phase of gastric secretion.

(5 marks)



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M.Sc(PRELIMINARY) DEGREE EXAMINATION – DECEMBER 2002

PAPER III: BIOCHEMISTRY Wednesday, December 04, 2002

Illustrate	your	answers	with	neatly	drawn	and	correctly	labelled	diagrams	wherever

1A. Describe gluconeogenesis from lactate. Add a note on its regulation.

(6+3 = 9 marks)

Maximum Marks: 100

1B. Classify enzymes with an example for each class.

(6 marks)

2. Write briefly on:

Time available: 3 Hours

appropriate.

 $(5 \times 7 = 35 \text{ marks})$

- 2A. Classification of proteins based on function with an example for each.
- 2B. Importance of the HMP shunt pathway.
- 2C. Ketone body synthesis and utilization.
- 2D. Prostaglandins
- 2E. Southern blotting and its applications.
- 3. Describe the metabolism of the sulfur containing amino acids. Add a note on the associated disorders.

(12+3 = 15 marks)

4. Write briefly on:

 $(5 \times 7 = 35 \text{ marks})$

- 4A. Replication of the lagging strand.
- 4B. Energy requirement of a 25-year-old male.
- 4C. Porphyrias.
- 4D. Hyperuricemia.
- 4E. Fluid mosaic model of the cell membrane with diagram.