C291

Note: Answer to all questions (including multiple choice questions) should be written in the provided answer book only.

Number of Printed Pages = 2

SARDAR PATEL UNIVERSITY
M.Sc (IV Semester) Examination (CBCS)
Friday, 7th December, 2012
10:30 am to 1:30 pm
Biotechnology
PS04EBIT05 – Human Physiology

TOTAL MARKS: 70

Q.1 Tick mark / select the correct answer for the following. (*Only correct option against given question number needs to be written in provided answer book*) (08 Marks)

1) The hematocrit is composed of:
   a) WBC
   b) Platelets
   c) RBC
   d) Plasma

2) Which of the following plasma proteins plays a role in blood clotting?
   a) Albumins
   b) Globulins
   c) Fibrinogens
   d) Prostaglandins

3) Which of the following processes is the primary function of the villi of the small intestine?
   a) Ingestion
   b) Secretion
   c) Absorption
   d) Mixing and propulsion

4) Why do emotions such as anger or fear slow digestion?.
   a) Because they stimulate the parasympathetic nerves supplying the GI tract
   b) Because they stimulate the somatic nerves that supply the GI tract
   c) Because they stimulate the sympathetic nerves that supply the GI tract
   d) They do not affect digestion

5) Which of the following is a waste product normally excreted by the kidneys?
   a) urea
   b) glucose
   c) insulin
   d) cholesterol

6) The ascending loop of Henle is impermeable to
   a) water
   b) urea
   c) albumin
   d) sodium

7) The function of the epididymis is:
   a) Sperm maturation
   b) Produce sperm
   c) Speratid storage
   d) Provide nutrition to sperm

8) This type of neuron has one main dendrite and one main axon.
   a) Bipolar neuron
   b) Multipolar neuron
   c) Unipolar neuron
   d) Purkinje cell

Q.2 Answer **any seven** from the following: **(14 marks)**

a) What are the factors on which GFR depends?
b) What would happen if free iron concentration increases in blood plasma?
c) Differentiate between (Inhibitory post synaptic potential)IPSP and EPSP (Excitatory post synaptic potential)
d) State the various cells types found in blood
e) Name the major hormones of the digestive system
f) What is the difference between isotonic and isometric contraction
g) Explain the term 'All or none principle'
h) Name any four hormones of anterior pituitary with their function.
i) Why menstrual cycle does not occur in females until she attains puberty.

Q.3 A: Describe the propagation of nerve impulse through a chemical synapse **(6 marks)**

Q.3 B: Describe the hormonal changes occurring in the various phases of menstrual cycle in human females **(6 marks)**

OR

Q.3 B: Write an overview on the organization of nervous system **(6 marks)**

Q.4 A: What is Micturation? How does micturation reflex occur **(6 marks)**

Q.4 B: Describe the sequence of events involved in the physiology of muscle contraction **(6 marks)**

OR

Q.4B: Give a diagrammatic overview of the blood-clotting cascade and write the important features of intrinsic, extrinsic and common pathway. **(6 marks)**

Q.5 A: Describe the absorption of carbohydrates, proteins and lipids in the wall of small intestine? **(6 marks)**

Q.5 B: State the routes of bile secretion in small intestine. **(6 marks)**

OR

Q.5 B: How do hormones of hypothalamus and pituitary control the processes of spermatogenesis in males **(6 marks)**

Q.6 A: State the various functions of blood and explain any one disease associated with defective components of blood **(6 marks)**

Q.6 B: Write is GFR? Explain the physiological significance of angiotensin II and atrial natriuretic peptide (ANP) in regulation of GFR **(6 marks)**

OR

Q.6 B: Write a shortnote on the composition and function of pancreatic juice. **(6 marks)**

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