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(61)

RC—2418

M.B.B.S. (PHASE I) DEGREE EXAMINATION, 2003

BIOCHEMISTRY

(Revised Scheme)

RC—1055

Time: Three Hours Maximum: 100 Marks

Yours answer shall be specific to the question asked.
Draw neat and labelled diagrams wherever necessary.

Long Essays: [2 x 9 = 18 Marks]

1. Describe the urea cycle. What is the normal blood urea level? Name two conditions in which blood urea level increases. (6 + 1 + 2 = 9 Marks)
2. Describe the β-oxidation of saturated fatty acids. Write a note on energetics of palmitic acid oxidation. (6 + 3 = 9 Marks)

Short Essays: [10 x 5 = 50 Marks]

3. Describe the features of competitive inhibition.
   Name two competitive inhibitors and their clinical use. (3 + 2 = 5 Marks)
4. Explain the following aspects of riboflavin: (a) Coenzyme forms.
   (b) Biochemical functions. (1 + 4 = 5 Marks)
5. Describe the absorption and transport of iron. (3 + 2 = 5 Marks)
6. Enumerate the functions and deficiency manifestations of Vitamin A. (2 + 3 = 5 Marks)
7. Name the key enzymes of gluconeogenesis.
   Explain how lactate is converted to glucose. (2 + 3 = 5 Marks)
8. Discuss the interpretation of oral glucose tolerance test. (5 Marks)
9. What is replication. Describe the steps of replication. (1 + 4 = 5 Marks)
10. Describe the reactions of glycogenolysis in liver. (5 Marks)
11. Name the plasma lipoproteins. Describe their functions. (1 + 4 = 5 Marks)
12. Describe the electron transport chain.
    Name two inhibitors of electron transport. (1 + 4 = 5 Marks)

Short Answers: [16 x 2 = 32 Marks]

13. Name the sulphur containing amino acids. List two disorders of their metabolism.
14. Explain substrate level phosphorylation with two examples.
15. Give two examples of enzymes having therapeutic use and indicate their specific applications.
16. Name two folate antagonists and their therapeutic use.
17. What is hemosiderosis? How it is caused?
18. What is Crigler – Najjar syndrome? Name the enzymatic defect.
19. Name the levels at which heme synthesis is regulated.
20. What is biotransformation? Give two examples.
21. Name two tumour markers and mention their diagnostic significance.
22. Define calorific value. Mention the calorific value of protein and fat.
23. What is the normal serum uric acid level? Name two pathological conditions associated with hyperuricemia.
24. What is kwashiorkor? Mention the biochemical finding in this condition.
25. Name the enzyme defect and biochemical findings in galactosemia?
26. Name the ketone bodies. Mention two causes of ketosis.
27. Define absolute specificity of enzyme. Give two examples.
28. Define zymozens. Give two examples.

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RC—2419

M.B.B.S. (PHASE I) DEGREE EXAMINATION, 2003

Paper I—PHYSIOLOGY

(Revised Scheme)

Time: 3 Hours **Maximum: 100 Marks**

LONG ESSAYS: (2 x 9 = 18 Marks)

1. Describe the conduction system of the Heart. Explain the spread of the Cardiac impulse. What is A-V Nodal delay and its importance? (3 + 2 + 2 + 2 = 9 Marks)
2. Describe the stages of Erythropoiesis and the factors necessary for Erythropoiesis. (6 + 3 = 9 Marks)

SHORT ESSAYS: (10 x 5 = 50 Marks)

3. Describe the regulation of secretion of Saliva. (5 Marks)
4. Describe the composition and functions of Pancreatic juice. (2 + 3 = 5 marks)
5. Explain the Enterohepatic circulation of Bile salts and its importance. (3 + 2 = 5 Marks)
6. Describe the effects of Mismatched blood transfusion. (5 Marks)
7. Describe the Sino – Aortic reflex and its importance. (3 + 2 = 5 Marks)
8. Describe the Chloride – Shift mechanism. (5 Marks)
9. Classify Hypoxia giving examples. Explain the role of Oxygen treatment in the different types of Hyoxia. (3 + 2 = 5 Marks)
10. Describe causation, manifestations and treatment of Decompression sickness. (1 + 2 + 2 = 5 Marks)
11. What is G F R? What is its normal value? How is it measured. (1 + 1 + 3 = 5 Marks)
12. Describe the machanism of Reabsorption of glucose in the Renal Tubule. Give the normal values for Renal threshold and Tubular transport maximum for Glucose. (3 + 2 = 5 Marks)

SHORT ANSWERS: (16 x 2 = 32 Marks)

13. Define Renal clearance. Give the normal value for clearance of Inulin. What do they indicate?
14. Explain the mechanism of absorption of bicarbonate in the Renal tubule.
15. Explain (a) Prevention and (b) Treatment of erythroblastosis fetalis.
16. Explain how (a) Dicoumarol and (b) EDTA prevent blood clotting.
17. Explain one method of determination of plasma volume in Man.
18. Explain Bainbridge of Reflex.
19. Define P-R interval giving its normal value. What is its significance?
20. State Fick's principle. Explain how it can be applied to determine cardiac output.
21. Draw and label the Ventricular muscle action potential.
22. Explain the phasic nature of Coronary blood flow.
23. Explain Bohr effect.
24. Explain Respiratory distress syndrome.
25. Enumerate the functions of the Liver.
26. What is Myenteric reflex? What is its importance?
27. Compare and contrast Active transport mechanism and Passive transport mechanism.
28. Mention the function of (a) Ribosomes (b) Lysosomes.

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RC—2420

M.B.B.S. (PHASE I) DEGREE EXAMINATION, 2003

Paper II—PHYSIOLOGY

(Revised Scheme)

Time: Three Hours Maximum: 100 Marks

Long Essays: [2 x 9 = 18 Marks]

1. Describe the ovarian changes during normal menstrual cycle. Explain their hormonal basis. Mention the tests for detecting ovulation. What is its importance? (4+2+2+1 = 9 Marks)
2. Name the functional divisions of cerebellum. Describe the connections and functions of cerebellum. Mention two signs of cerebellar leisions? (2+3+3+1 = 9 Marks)

Short Essays: [10 x 5 = 50 Marks]

3. Describe the differences between "Pituitary Dwarf" and "Thyroid Dwarf". (5 Marks)
4. What is the normal serum calcium level? What are the features of tetany? (1+4 = 5 Marks)
5. What is Cushing's syndrome? What are its clinical features? (1+4 = 5 Marks)
6. Describe with the help of a diagram the olfactory pathway. (3 + 2 = 5 Marks)
7. What is meant by visual acuity? What are the factors that influences vsual acuity. How it is tested. (1+3+1 = 5 Marks)
8. What is meant by deafness? What are the different types of deafness and its causes. How is it tested. (1+1+1+2 = 5 Marks)
9. Explain any three properties of synapses. (5 Marks)
10. Briefly outline the role of endogenous pain inhibiting system. (5 Marks)
11. Draw a diagram of action potential recorded from a nerve fibre, explain its ionic basis. (2+3 = 5 Marks)
12. What is myasthenia gravis? What are its clinical features? Explain the basis of its treatment. (1+2+2 = 5 marks)

Short Answers: [16 x 2 = 32 Marks]

13. Mention the clinical features of adrenogenital syndrome.
14. Explain why polyuria occurs in diabetes insipidus.
15. What is the normal intraocular pressure? What is the clinical importance?
16. Mention the nerve supply of the tongue which carries the general sensations and taste sensations from different areas of the tongue.
17. What is Argyl-Roberteson's pupil? Name site of lesion producing it.
18. List the functions of sertoli cells.
19. Composition of semen.
20. List the functions of limbic system.
21. Name the type of neuroglia and mention their functions.
22. Name any two types of abnormal gaits and mention the diseases associated with them.
23. List the signs of upper motor neuron leision.
24. What is "All or None Law" explain its relevance with respect to cardiac muscle and skeletal muscle.
25. What is rigor mortis? What is its medicolegal importance.
26. Define Starling's law of muscle contraction. How it is applied in case of cardiac muscle.
27. What is the normal body temperature? What are the means of heat loss from the body.
28. Mention the functions of skin.

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- APR 20

RC—2421

M.B.B.S. (PHASE I) DEGREE EXAMINATION, 2003

Paper I—ANATOMY

(Revised Scheme)

Time : Three Hours Max : 100 Marks

Your answers shall be specific to the questions asked.
Draw neat and labelled diagrams wherever necessary.

Long Essays : [2 X 9 = 18]

1. Describe the right atrium under the following headings.
   a) External and internal features. b) Blood supply and nerve supply c) development including that of inter atrial septum. (4+2+3= 9)
2. Describe the origin, course, relations and distribution of the oculomotor nerve. Add a note on its applied anatomy. (1+2+2+3+1= 9)

Short Essays : [10 X 5 = 50]

3. Derivatives of first pharyngeal arch - Nerve supply, skeletal and muscular derivatives. (1+1+3 = 5)
4. Brachial artery – extent, course and relations, branches. (2+3 = 5)
5. Microscopic anatomy of pituitary gland – labelled diagram only. (5)
6. Supination and pronation – definition, joints involved and muscles causing the movements. (1+1+3 =5)
7. Cauda equina – definition, extent and constituent fibers. (1+2+2 = 5)
8. Trachea – extent, relations, development. (1+3+1 =5)
9. Serratus anterior muscle – attachments, nerve supply and action, applied anatomy. (2+2+1 =5)
10. Inferior cerebellar pendunle – connections, constituent fibers. (2+3 =5)
11. Sub – mandibular group of lymph nodes – location and relations, area of drainage (2+3 =5)
12. Nasopharynx – location, communications, boundaries. (1+1+3 =5)

Short answers : [16 X 2 = 32]

13. Name any four contents of superior mediastinum.
14. Mention the sensory innervation of the mucosa of larynx.
15. Name any two important changes in the foetal circulation soon after birth.
16. Mention the tributaries of the azygos vein.
17. Mention the root value and distribution of the phrenic nerve.
18. What is claw hand ?
19. Labelled diagram of the microscopic structure of thymus.
20. What are dorsal digital expansions ?
21. Give three differences between axon and dendrite.
22. Mention any four events at the sternal angle.
23. Fate of sinus venosus.
24. Pisiform bone.
25. Mention the contents of pterygopalatine fossa.
26. Name the bones meeting at the asterion. Mention the venous sinus related deep to it.
27. Name the types of lamellae in compact bone.
28. Mention any four derivatives of mesoderm.

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RC—2422

E- APR 20

M.B.B.S. (PHASE I) DEGREE EXAMINATION, 2003

Paper II—ANATOMY

(Revised Scheme)

(65)

Time : Three Hours Max : 100 Marks

Your answers shall be specific to the questions asked.
Draw neat and labelled diagrams wherever necessary.

Long Essays : [2 X 9 = 18]

1. Describe the rectus sheath under the following headings.
   a) Formation at different levels. b) Contents. c) Applied anatomy. (5+3+1 =9)
2. Describe the internal features, sphineters, blood supply, lymphatic drainage, nerve supply and applied anatomy of the Anal canal. (2+2+1+1+1+2=9)

Short Essays : [10 X 5 = 50]

3. Popliteus muscle – attachments, nerve supply, action, specific features. (2+1+1+1 = 5)
4. Greater Sciatic foramen – location, sex differences, structures passing through. (1+1+3= 5)
5. Plantar aponeurosis – location, formation and its morphology, attachments, function. (2+1+1+1 = 5)
6. Great saphenous vein – formation, extent, course and tributaries, applied anatomy. (1+1+2+1 =5)
7. Pudendal canal – location, extent, formation, contents. (1+1+2+1 = 5)
8. Superficial perineal pouch – location, boundaries, contents. (1+2+2 =5)
9. Inferior mesenteric artery – origin, course, area supply and branches. (1+1+1+2 =5)
10. Descent of testis – need for descent, factors causing, applied anatomy. (1+3+1 =5)
11. Stomach bed – definition, description with diagrammatic expression. (1+4 =5)
12. Porto – caval anastomoses – definition, sites, applied anatomy. (1+3+1 =5)

Short answers : [16 X 2 = 32]

13. Fundic glands of stomach.
14. Juxta – glomerular apparatus.
15. Miscroscopic appearance of cornea [only labelled diagram]
16. Miscroscopic appearance of testis [only labelled diagram]
17. Miscroscopic appearance of lingual papillae [only labelled diagram]
18. Name four developmental anomalies of the kidney.
19. Name four derivatives of the dorsal mesogastrium.
20. Describe the development of the prostate.
21. Name the derivatives of paramesonephric ducts.
22. Development of caecum.
23. Write any three differences between mitosis and meiosis.
24. Karyotype and any two clinical features of Down's syndrome.
25. Recessive genes.
26. Mitochondrion.
27. Barr body.
28. Mc. Burney' s point and its applied importance.

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P3 *Total No. of Pages : 2]* **Code No.: RC-2744**

M.B.B.S. (PHASE-I) DEGREE EXAMINATION, 2003

BIOCHEMISTRY

(Revised Scheme)

F - SEP 2003

Time : 3 Hours] *[Max. Marks : 100*

Your answer shall be specific to the questions asked

Draw neat and labelled diagrams wherever necessary

❖ ❖ ❖

Long Essays:

1) Describe the reactions of gluconeogenesis. Mention its significance. [7+2 = 9]

2) How provitamin D is converted to its active form? Describe the biochemical role and deficiency manifestations of vitamin D. [3+3+3=9]

Short Essays:

3) Write briefly on glycogen storage disorders. [5]

4) What are isoenzymes? Name the isoenzymes forms of LDH and CK. What are their clinical significance? [1+2+2=5]

5) Write the components of electron transport chain. Indicate the sites of ATP formation during electron transport. Name two inhibitors of electron transport. [2+2+1=5]

6) What are porphyrias? How are they classified? Name the enzymatic defect and biochemical findings in any one of the porphyrias. [1+2+2=5]

7) Name the immunoglobulins. Describe their functions. 1+4=5]

8) Enumerate the functions of albumin. Mention the causes of hypoalbuminemia and consequences of hypoalbuminemia. [3+1+1=5]

9) Describe the clinical applications of recombinant DNA technology. [5]

10) Name the different types of lipases involved in lipid metabolism. Mention their site of action, function and activation. [1+1+2+1=5]

11) List the derivatives of cholesterol. Describe the biomedical importance of three derivatives of cholesterol. [2+3=5]

12) Discuss the biochemical changes during starvation. [5]

P.T.O.

Short Answers: (67) [16 x 2 = 32]

13) What is reverse transcriptase? What is its significance?

14) What are essential amino acids? Name them.

15) Name the inhibitors of oxidative phosphorylation.

16) Name two competitive inhibitors of enzyme and mention their clinical uses.

17) What are zymogens? Give two examples.

18) What is steatorrhoea? Mention two causes for steatorrhoea.

19) Explain why acidosis causes hyperkalemia? How it is corrected?

20) What is anion gap? Mention two causes for increased anion gap?

21) What are antivitamins? Give two examples.

22) How GABA is formed? What is its function?

23) What is anaplerosis? What is its significance?

24) Name the biochemical defect in (a) Phenyl ketonuria and (b) Maple syrup urine disease.

25) What is heat coagulation test? What is its clinical importance?

26) What is renal glycosuria? How do you differentiate it from diabetic glycosuria?

27) Name the biochemical defect in (a) Niemann-Pick disease and (b) Gaucher's disease.

28) Name the ketone bodies. Mention two conditions causing ketosis.

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P4 *Total No. of Pages : 2]* **Code No.: RC-2745**

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M.B.B.S. (PHASE-I) DEGREE EXAMINATION, 2003
PAPER - I - PHYSIOLOGY
(REVISED SCHEME)

- SEP 2003

Time : 3 Hours] *[Max. Marks : 100*

Your answers shall be specific to the questions asked.
Draw neat and labelled diagrams wherever necessary .

❖ ❖ ❖

Long Essays: [2x9 =18]

1) Explain the basis for the classification of Blood groups. Describe the Rh blood group system with its importance. [3+3+3=9]

2) Describe the mechanics of Respiration. Define Lung compliance. Mention two conditions which reduce Lung compliance. [6+1+2=9]

Short Essays: [10 x 5 = 50]

3) Describe the fate of Haemoglobin following Haemolysis. [5]

4) What is Timed vital capacity? How is it measured? Give its importance as Lung Function test. [2+1+2=5]

5) Explain the origin and spread of Cardiac impulse. [5]

6) Describe Sino - Aortic Reflex. [5]

7) Explain the factors influencing Coronary circulation. [5]

8) Diagrammatically represent a normal ECG. Explain the causes for different waves. [2+3=5]

9) Mention the different phases of Deglutition. Explain the second phase of Deglutition. [2+3=5]

10) Explain the mechanism of secretion of Hydrochloric acid in the stomach.[5]

11) Describe the movements of Large intestine. [5]

12) Draw a labelled diagram of Juxta-Glomerular apparatus. What are its functions? [2+3=5]

P.T.O.

[16 x 2 = 32]

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13) Mention any four factors that prevents coagulation of blood inside the blood vessels.

14) What is a Plasma cell? What is its function?

15) What is the difference between Active transport and Passive transport. Give an example for each.

16) What is meant by transcription and translation process.

17) What is Haldane's effect?

18) What is Cyanosis? How is it produced? What are its types?

19) Explain Alveolo - Capillary membrane.

20) Define Marey's Law. Mention one condition which is an exception to this.

21) Define auto regulation of Blood flow. Mention any one theory which explain it.

22) Explain Entero - Hepatic Circulation.

23) Name any two Gastro Intestinal Hormones. Mention its actions.

24) What is Plasmapheresis? What is its importance.

25) Explain why polyuria occurs in Diabetes mellitus.

26) Draw and label a normal Cystometrogram.

27) What is G.F.R.? What is its normal value? How is it measured.

28) Why the cardiac muscle will not undergo Tetanus or Fatigue.

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P5 *Total No. of Pages : 2]*

Code No.: RC-2746

M.B.B.S. (PHASE-I) DEGREE EXAMINATION, 2003

PAPER - II : PHYSIOLOGY

SEP 2003

(Revised Scheme)

Time : 3 Hours] *[Max. Marks : 100*

Your answers shall be specific to the questions asked.

Draw neat and labelled diagrams wherever necessary.

❖ ❖ ❖

Long Essays: [2x9 =18]

1) Name the Anterior pituitary hormones. Describe five functions of growth hormone. What are the clinical manifestations of Hypersecretion in children and adults. [2+4+3=9]

2) Describe the formation, circulation, drainage and functions of Aqeous humour. What is Glaucoma? [2+2+2+2+1=9]

Short Essays: [10 x 5 = 50]

3) Compare and contrast the actions of Epinephrine and Norepinephrine. [5]

4) Mention the functions of vestibular apparatus. [5]

5) Explain the mechanism of action of oral contraceptive pills. [5]

6) Explain the stages of spermatogenesis, list the factors regulating it. [3+2=5]

7) What is conditioned reflex and unconditioned reflex. Explain with an example. [1+1+3=5]

8) Explain with the help of a diagram sensory and motor changes in hemisection of spinal cord. [1+4=5]

9) Give the neural circuits for crossed extensor reflex, explain its functional Importance. [3+2=5]

10) What is EEG? List the change in EEG during different stages of sleep. [1+4=5]

11) Explain excitation, contraction, coupling reaction, with the help of a diagram. [3+2=5]

12) Define chronaxie, rheobase and utilization time. Draw a strength duration Curve. [1+1+1+2=5]

P.T.O.

[16 x 2 = 32]

Short Answers: [16 x 2 = 32]

13) Mention the clinical features of cretinism.

14) What is latent tetany? Explain one clinical test to detect it.

15) Name the zones of adrenal cortex and the hormones secreted by them.

16) What is tympanic reflex.

17) Draw a diagram showing taste pathway and label its parts.

18) What is meant by audiometry.

19) Explain the role of oxytocin during parturition.

20) Name the type of neuroglia and mention their functions.

21) List the functions of limbic system.

22) Differentiate between local potential and action potential.

23) What is aphasia? Name different types of aphasias.

24) Define refractory period of an excitable tissue, explain how it differs in cardiac and skeletal muscles, what is its significance.

25) Differentiate isometric and isotonic muscle contraction with one example for each.

26) Describe saltatory conduction.

27) Mention the functions of skin.

28) What are the means of heat loss from the body?

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P6 *Total No. of Pages : 2]* (72) **Code No.: RC-2747**

M.B.B.S. (PHASE-I) DEGREE EXAMINATION, 2003

PAPER - I : ANATOMY

- SEP 2003

(Revised Scheme)

Time : 3 Hours] *[Max. Marks : 100*

Your answers shall be specific to the questions asked
Draw neat and labelled diagrams wherever necessary

❖ ❖ ❖

Long Essays: [2x9 =18]

1) Describe the shoulder joint under the following headings.
   a) Type and articular surfaces b) Capsule and ligaments
   c) Movements and muscle acting d) Applied aspects [2+2+4+1=9]

2) Describe the thyroid gland under the following headings.
   a) Parts, location and coverings b) Relations
   c) Blood supply d) Development [2+3+3+1=9]

Short Essays: [10 x 5 = 50]

3) Implantation - site, types, factors assisting. [1+1+3=5]

4) Buccinator muscle - attachments, nerve supply, action. [3+1+1=5]

5) Otic ganglion - type and location, relations, connections. [1+1+3=5]

6) Internal capsule - location and type of fibres present, parts and connections, blood supply and applied anatomy. [1+2+2=5]

7) Fibrous pericardium - extent, relations and blood supply, development and applied anatomy. [1+2+2=5]

8) General investing layer of deep cervical fascia - attachments, structures enclosed. [3+2=5]

9) Microscopic anatomy of thin skin - labelled diagram, differences from thick skin. [4+1=5]

10) Emissary veins - definition, examples, specific features and applied anatomy. [1+1+2+1=5]

11) First intercostals space - enumeration of the contents, specific features of the blood vessels located. [3+2=5]

12) Hyoid bone - parts, major attachments, development. [2+2+1=5]

P.T.O.

Answers :

[16 x 2 = 32]

Define a broncho pulmonary segment.

14) Mention any four branches of left coronary artery.

15) Hilton's law.

16) Microscopic structure of placenta (labellec diagram only)

17) Pleural recesses and its role.

18) What is spermiogenesis?

19) What is wrist drop?

20) Name the structures piercing clavipectoral fascia.

21) Mention the sites of normal constrictions in the oesophagus.

22) Mention the nerve supply and actions of trapezius muscle.

23) Mention the cutaneous innervation of the dorsum of the hand

24) Name the remnants of the Notochord process.

25) Atavastic epiphsys.

26) Mention any four peculiarities of the first rib.

27) Centrioles.

28) Mention the major openings of the thoracic diaphragm with contents.

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P7 *Total No. of Pages : 2]* CENTRAL LIBRARY **Code No.: RC-2748**

M.B.B.S. (PHASE-I) DEGREE EXAMINATION, 2003
ANATOMY - PAPER - II
(REVISED SCHEME)

- SEP 2003

Time : 3 Hours] *[Max. Marks : 100*

Your answer shall be specific to the questions asked
Draw neat and labelled diagrams wherever necessary

❖ ❖ ❖

Long Essays:

1) Describe the femoral nerve under the following headings.
   a) Origin, course and termination b) Relations
   c) Branches [3+2+4=9]

2) Describe the uterus under the following headings:
   a) Position and parts b) Supports
   c) Blood supply d) Development [2+3+1+3=9]

[10 x 5 = 50]

Short Essays:

3) Medial longitudinal arch of foot
4) Peroneal artery
5) Bile duct
6) Coeliac trunk
7) Thoraco lumbar fascia
8) Blood supply and nerve supply of anterior abdominal wall.
9) Greater omentum
10) Relations of right kidney
11) Nervi erigentis
12) Levator ani

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P.T.O.

Short Answers: [16 x 2 = 32]

13) Peyer's patches
14) Oesophageal glands
15) Histological structure of liver [only labelled diagram]
16) Histological structure of ureter [only labelled diagram]
17) Histological structure of vermiform appendix [only labelled diagram]
18) Parts of pancreas developed from dorsal pancreatic bud.
19) Ectodermal cloaca.
20) Name any four Derivatives of mid gut.
21) Zygosis
22) Functions and fate of gubernaculum testis.
23) Mention any three structural abnormalities of chromosomes
24) What is the difference between metacentric, submetacentric and acrocentric chromosomes.
25) Recessive genes
26) Non-disjunction
27) Write diagrammatic representation of spermatocytogenesis.
28) Adductor tubercle.

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