001/24

Paper :1

The West Bengal University of Health Sciences MBBS 1st Professional Examination (New Regulation), February-March 2024

Subject: Anatomy

Full Marks : 100 Time: 3 hours

1+3+3+3+2+3

2+3+5+2+3

1+1+3+3+2

2x5

5x4

Attempt all questions. The figures in the margin indicate full marks.

- 1. a) A female patient is presented in medicine OPD with black stool and vomiting of blood.
 - i) Name the condition patient suffers from.
 - ii) Name the important sites where portocaval anastomosis is present in the body.
 - iii) Explain the causes of black stool and vomiting of blood by the patient.
 - iv) Draw a labelled diagram of histological picture of liver.
 - v) How does portal vein formed in the body?
 - vi) Name the important veins draining into portal vein.
 - b) A 53 year old patient with history of cervical spondylosis (degeneration of bone or disc), complains of shortness of breath for last 15 days when lying flat. After radiological investigation, he is diagnosed as diaphragmatic paralysis.
 - i) Explain the causes of paralysis of diaphragm in this case.
 - ii) Role of diaphragm in normal breathing.
 - iii) Write in brief about major openings of diaphragm.
 - iv) What is hiatal hernia?
 - v) Enumerate the embryological sources of diaphragm.
 - a) On routine ultrasound of a lady, one of the kidneys was found in the pelvic cavity. Explain anatomically. Describe the development of kidney with suitable diagrams. Write in brief about different developmental anomalies of kidney.

b) A patient presented with wrist drop after a car accident resulting in fracture of the shaft humerus. Which nerve is affected? Describe the nerve involved under the following headings:

i) Root value.

- ii) Course with relation in the arm.
- iii) Distribution in the arm.
- iv) Cause of wrist drop.

c) Describe the Placenta under the following headings: 2+4+4
 i) Gross features.

ii) Formation of different chorionic villi with diagrams.

- iii) Types of placenta.
- 3. Write short notes on the following:
 - a) Enumerate and describe professional qualities and roles of a physician.
 - b) Describe the classification of glands with examples.
- 4. Explain the following statements:

a) Haemorrhoids develop frequently during later stage of pregnancy.

- b) In pleural drainage, needle is inserted along upper border of lower rib.
- c) Varicosity of pampiniform plexus of vein is more common in left side.
- d) Infection of long bones affects primarily the metaphysis.
- e) Preservation of splenic hilar tissue is essential during splenectomy.
 - P.T.O

5. Choose the correct option for each of the following:

i) The great cardiac vein lies in which groove:

a) Anterior part of right coronary sulcus.

c) Anterior inter ventricular groove. d) Posterio

b) Posterior part of right coronary sulcus.

d) Posterior inter ventricular groove.

ii) 'Proximal wing tendon' of dorsal digital expansion are:

- a) Lumbricals. b) Palmar interossei.
- c) Dorsal interossei. d) Both interossei.

iii) The 7th to 11th intercostal nerves appears in the anterior abdominal wall through:

- a) Costal origins of diaphragm and transversus abdominis
- b) Internal and external oblique.
- c) Internal oblique and transversus abdominis.

d) Internal and external oblique.

iv) Meckel's diverticulum is derived from:

a) Allantoic diverticulum.b) Omphalomesenteric duct.c) Ventral mesogastrium.d) Ductus arteriosclerosis.

v) Which of the following muscle is developed from ectoderm?

- a) Levator palpebrae superioris. b) Sphincter pupillae
- c) Latissimus dorsi. d) Deltoid

vi) Fibrous pericardium is innervated by:

a) Vagus nerve.

b) Phrenic nerve.

c) Intercostal nerve. d) Thoracic splanchnic nerve.

vii) Uterus didelphys consists of

- a) Single uterus, double cervix and vagina.
- b) Double uterus, double cervix, double vagina.
- c) Double uterus, single cervix and vagina.

d) Double uterus and cervix with single vagina.

viii) Lining epithelium of male urethra from colliculus to commencement of terminal fossa:

- a) Transitional. b) Stratified squamous.
- c) Stratified cuboidal. d) Stratified columnar.

ix) Which cells of gastric gland give beaded appearance?

a) Peptic cells	b) Oxyntic cells
c) Mucus cells	d) G cells

d) G cens

x) Select the incorrect statement about the lower end of radius:

a) It is the widest part of the bone.

b) Its posterior surface presents lister's tubercle.

- c) Groove lateral to lister's tubercle lodges the tendon of extensor pollicis.
- d) Its medical surface presents the ulnar notch.

001/24

The West Bengal University of Health Sciences MBBS 1st Professional Examination (New Regulation), February-March 2024

Subject: Anatomy Paper : II Full Marks : 100 Time : 3 hours

5+6+4

Attempt all questions. The figures in the margin indicate full marks.

- 1. a) A child was brought to a doctor with the complains of difficulty in sucking and swallowing. It was found that the child had a defect in the palate.
 - i) Explain the different developmental defects of palate from your knowledge of embryology.
 - ii) Describe the composition of soft palate with a diagram.
 - iii) What are the motor and sensory innervations of palate?

b) An athlete while running experienced severe cramps in his right thigh and was diagnosed as a case of pulled hamstrings.

- i) Mention the characteristics of hamstrings.
- ii) Write about the origin, insertion, nerve supply and actions of this group of muscles.
- iii) Discuss expansions of Semimembranosus muscle.
- iv) Why all hamstring muscles are not true hamstring? 2+6+4+3
- 2. a) What is Rima Glottidis and its boundaries? Name the muscles controlling the shape of Rima Glottidis under different physiological functional conditions. What is Singer's nodules?

b) A 76 year old right-handed hypertensive patient brought to emergency with complain of severe headache, right sided weakness in the arm, leg and face. During examination, physician found that he is suffering from confusion, right sided hemiplegia, difficulty in speaking or understanding of speech and diagnosed as a case of cerebrovascular accident.

- i) Which artery and which hemisphere is most likely affected in this case?
- ii) Explain anatomically the reason of difficulty in speaking and understanding of speech.
- iii) Which part of brain involvement is responsible for right hemiplegia in this case?

c) What are the parts of tongue? Give an account of the development of the tongue. What is the nerve supply of the tongue according to development? Name two types of papillae with taste buds on the dorsal surface of the tongue. 2+3+4+1

- 3. Write a short note on the following:
 a) Down's syndrome its genotype and phenotype.
 b) Draw and label the microscopic structure of cerebellar cortex.
- 4. Explain the following statements:
 - a) Injury to superior gluteal nerve shows positive trendelenberg's sign.
 - b) A patient of pituitary tumor suffers from bitemporal hemianopia.
 - c) After thyroid operation patient develops hoarseness of voice.
 - d) In Argyll robertson's pupil, light reflex is lost but accommodation reflex persists.
 - e) Optic disc in eye ball is known as blind spot.

5x4

P.T.O

2x5

2+(3+3)+2

5. Choose the correct option for each of the following:

i) Embryological source of tympanic membrane is all except:

a) Ectoderm of 1st pharyngeal cleft.

b) Endoderm of 1st pharyngeal pouch.

c) Mesoderm of 1st pharyngeal arch.

d) No mesodermal contribution.

- ii) Nerve piercing the sphenomandibular ligament:
- a) Nerve to myelohyoid. b) Inferior alveolar nerve.
- c) Buccal nerve. d) Lingual nerve.

iii) Superior Cerebellar Peduncle contains which of the following fibres?

- a) Posterior Spinocerebellar. b) Olivocerebellar.
- c) Vestibulocerebellar. d) Anterior spinocerebellar.

iv) All the dural sinuses are present in the attached margin of the tentorium cerebelli except:

- a) Superior petrosal sinus.
- b) Right transverse sinus.

c) Inferior petrosal sinus.

d) Left transverse sinus.

v) In a Robertsonian translocation fusion occurs at the:

- a) Telomere. b) Centromere.
- c) Histones. d) Ends of the long arms.

vi) A woman reports to the OPD with complains of headache, on examination she has medial squint. The CT scan of brain reveals dilated ventricles. The probable cause of medial squint is due to involvement of which nerve-

a) Occulomotor nerve.

b) Abducent nerve.

c) Trochlear nerve.

d) Ophthalmic nerve.

vii) The parasympathetic nerve for the submandibular ganglion is derived from:

- a) Chorda tympani nerve.
- b) Lingual nerve.d) Hypoglossal nerve.

c) Maxillary nerve.

viii) Tip of the nose is supplied by:

a) Infraorbital nerve.

- b) Infratrochlear nerve.
- c) Zygomatico facial nerve.
- d) External nasal nerve.

b) Soleus.

ix) Which muscle is regarded as Peripheral heart?

- a) Flexor digitorum longus.
- c) Tibialis posterior. d) Gastrocnemius.

x) Select the correct statement about Karyotyping:

- a) Chromosomes are arranged in seven groups, referred to by letter A to G.
- b) Chromosomes of group A and F are submetacentric.

c) Chromosomes of group D and G are metacentric.

d) X Chromosome belongs to group G and Y Chromosome belongs to group C.

The West Bengal University of Health Sciences MBBS 1st Professional Examination (New Regulation), Feb-March 2024

Subject: Physiology Paper : I Full Marks : 100 Time : 3 hours

Attempt all questions. The figures in the margin indicate full marks.

- 1. a) A 60 year old male came to ER with history of frequent syncope. On examination his pulse rate was 42/min, irregularly irregular and BP was 110/60 mm Hg. Lead II ECG showed p waves that were not related to QRS complex. What is the probable diagnosis? Describe the mechanism explaining your probable diagnosis. How to treat this patient? What are the other probable diagnosis? What is "Re entry phenomena"? Explain with a neat diagram. 2+5+2+3+1+2
 - b) A preterm baby born at before 37 weeks of gestation, presented with severe breathlessness. On examination, intercostals suction and coarse crepitations were found. A diagnosis of infant respiratory distress syndrome was made. What is the cause of infant respiratory distress syndrome? What is the composition of pulmonary surfactant? Explain, in detail, its various functions. What is interdependence? 2+3+8+2
 - 2. a) Summarize the steps of Bilirubin production, metabolism, and excretion with diagram. Enumerate two congenital diseases affecting conjugation of bilirubin. What are the physical signs of chronic liver disease? How does Liver Function Tests help us to diagnose the cause 4+2+2+2
 - b) How are the Acetylcholine containing vesicles released at the Neuro-muscular junction? What is the mechanism of action of Botulinum Toxin as a neuro-muscular blocker? What is 4+4+2
 - c) What is Methyl-Tetrahydrofolate trap? How is it going to cause Megaloblastic anaemia? Why oral vitamin B12 is of no use in Pernicious Anaemia? 4+4+2
 - 3. Write short notes on the following:
 - a) Positive feedback mechanism.
 - b) Goals to be achieved by an Indian Medical Graduate.
 - 4. Explain the following statements:
 - a) Cardiac muscle can't be tetanized.
 - b) Liver disease may cause edema.
 - c) Glucose and salt are used together to treat diarrhoea.
 - d) Pulmonary Tuberculosis commonly affects the lung apices.
 - e) Classical haemophilia is seen in only males.

5x4

2x5

5. Choose the correct option ofi) Which of the following is nota) BP regulation.	each of the following: 10x1 t mediated through negative feedback mechanism? b) Growth hormone release
c) Thrombus formation.	d) ACTH release.
ii) Transection at mid pons level	results in:
c) Rapid and shallow breathing	b) Hyperventilation. ng. d) Apneusis.
iii) Carotid and aortic bodies are	markedly stimulated at a
a) 90%.c) 70%	b) 80%
iv) Sickle cell anaemic courses	u) 0070
a) Hypoxic hypoxia	
c) Histotoxic hypoxia.	b) Anaemic hypoxia. d) Stagnant hypoxia.
v) Which of the following is resp	ponsible for cell motility?
a) Motilin	b) Tubulin
c) Laminin	d) Clathrin
vi) "Saturday night palsy" is an e a) Neuropraxia	example of:
c) Neurotmesis.	b) Axonotmesis. d) Wallerian degeneration.
vii) The rhythmic contraction in G	IT is highest in -
a) Stomach. c) Ileum.	b) Duodenum. d) Colon.
viii) Normal alveolar ventilation pr	Assure on incrimetion i
a) -1cm water.	b) 1cm Ha
c) $+1$ cm water.	d) +1 mm Hg.
ix) The defect in β chain of Haemo	oglobin E (Hb E) is -
a) Glutamic acid is replaced by	Glycine at 67 th position
c) Glutamic acid is replaced by	Lysine at 67 th position
d) Glutamic acid is replaced by	Lysine at 26 th position Tyrosine at 26 th position
 x) Smooth muscle is characterized a) Actin 	d by absence of :
c) Myosin	b) Troponin d) Tropomyosin
a Barran B	

.

The West Bengal University of Health Sciences MBBS 1st Professional Examination (New Regulation), Feb-March, 2024

Subject: Physiology Paper: II

Full Marks : 100 Time: 3 hours

Attempt all questions. The figures in the margin indicate full marks.

- a) A patient came to emergency dept. with road traffic accident, with injury at the level of T8 vertebra. On examination, it was found that motor loss is prominent on the same side and sensory loss on the opposite side below T8. What is your diagnosis? Explain the phenomenon with diagram. Which type of sensation will be affected below that lesion and why? 1+(5+5)+(2+2)
 - b) A 40 year old female patient suffered from severe pain in her right upper abdomen which radiated to the back. Oral cholecystography revealed presence of multiple stones in her gall bladder. She also suffered pain in left neck.
 What is the cause of 'pain in the neck'? What is dermatomal rule? What are the theories behind this neck pain? Describe briefly the pain-inhibiting mechanisms in the body. 2+1+4+8

2. a	.) Enumerate contraceptive methods disadvantages of oral contraceptive pills	in male and female. Discuss the advantages s.	and 5+5
b) Briefly discuss counter current mechar	nism. What is the importance of vasa recta?	8+2
c)	Outline the steps of synthesis of thyroi	id hormone. What is Wolff Chaikoff effect?	8+2
3. a) b)	Write short notes on the following: Stretch reflex and inverse stretch reflex Splay phenomenon.	x	2x5
4. a) b) c) d) e)	Explain the following statements: Adequate sleep promotes growth. Radiologist/pilots use red goggles who Mother's urinary estriol provides a go Polyphagia occurs in diabetes mellitus Aspirin and NSAIDs relieve fever.	en come to bright light. ood index of fetal wellbeing. s.	5x4
5. i) ii)	Choose the correct option of each of th Transection of pituitary stalk increases a) ACTH. c) Growth Hormone. Sertoli cell secretes all except:	he following: 10 the secretion of b) Prolactin. d) None of the above.	0x1
	a) Androgen binding protein.	b) Inhibin.	

d) Mullerian Inhibiting substance.

c) Testosterone.

P.T.O

001/23

iii) Which is not true about knee jerk?

- a) It involves a brief contraction of Quadriceps muscle.
- b) It is a polysynaptic reflex.
- c) Delayed relaxation may be seen in a hypothyroid child.
- d) May be absent in lesions involving L3-L4 segment.
- iv) Which is not characteristic of REM sleep?
 - b) Muscle tone is increased. a) Subject is difficult to arouse.
 - d) Low voltage high frequency waves seen in EEG. c) Increased activity in pontine.

v) Which of the following hormones is responsible for conversion of chondrocytes into osteogenic cells?

a) Thyroxine.

c) Parathyroid hormone.

b) Testosterone. d) Growth hormone.

- vi) Which of the following causes hypocalcemia?
 - b) Calcitonin. a) Parathormones. d) Thyroxine c) Cholecalciferol.
- vii) All are second messengers except.
 - a) ATP c) Ca++.

- b) cAMP. d) IP3.
- viii) Hormone responsible for midcycle rise in basal body temperature is:
 - a) Follicle stimulating hormone.

c) Progesterone.

b)Luteinizing hormone. d)Estrogen.

- ix) Medial Geniculate Body is related with:
 - a) Taste.
 - c) Vision.

b) Smell. d) Hearing.

- x) Purkinje fibres are inhibitory to:
 - a) Deep cerebellar nuclei.
 - c) Basket cells.

b) Climbing fibre. d) Spinocerebellar tracts 001/24

The West Bengal University of Health Sciences MBBS 1st Professional Examination (New Regulation), February-March 2024

Full Marks: 100 Time: 3 hours

Subject: Biochemistry Paper: I

Attempt all questions. The figures in the margin indicate full marks.

1. a) Classify different metabolic disorders of inborn according to major biomolecules (mention two diseases from each group). Name the different biochemical tests to identify these errors both qualitatively and quantitatively. Describe in brief about Maple syrup urine disease. 5+5+5

b) A 45 year old female was admitted in hospital suffering from right upper abdomen pain. On examination, it was found that she was suffering from jaundice. USG revealed dilated CBD and a stone in the CBD. Blood examination showed the following findings- Hb-10.4 g/100ml, TLC-14,500/cmn, bilirubin(total) - 10.4 mg/100ml, bilirubin (direct) - 9.4 mg/100ml, ALT (SGPT) - 70 IU/L, AST (SGOT) - 65 IU/L, alkaline phosphatise - 450 IU/L, total protein - 7.2 g/100ml, albumin – 4.4g/100ml, glucose (random) – 140 mg/100ml, creatinine – 0.9 mg/100ml. i) Explain the findings of blood report is this patient.

ii) Classify jaundice with example. iii) Comment on the possibility of steatorrhea and vitamin K deficiency in case of obstructive jaundice.

2. a) Classify phospholipids with examples. What is respiratory distress syndrome (RDS) in newborn? Discuss the cause of this condition. Describe the strategy for prevention of this of types different condition.

(phenylketonuria). Name hyperphenylalaninemia hyperphenylalaninemia. Name the different tests used for diagnosis of this condition. Discuss the principles for management of this condition.

c) Define gluconeogenesis. Enumerate the non-carbohydrate substances which are used for gluconeogenesis. Describe the regulation of gluconeogenesis. Explain, with proper reason, whether it is anabolic pathway or catabolic pathway.

2x5

5x4

3. Write short notes on the following:

- a) Dynamics of doctor-patient communication.
- b) Respiratory acidosis.

4. Explain the following statements:

a) Fiber diet reduces the risk of coronary heart diseases (CHD).

- b) Flippase pattern of LDH in blood (in disease).
- c) HDL is known as good cholesterol.
- d) Pyruvate kinase deficiency causes anaemia.
- e) Hyperuricemia is seen in Lesch Nyhan syndrome.

5. Choose the correct option for each of the following:

10x1

	U.Z. 5. Linerhanste 26 mmol/L. partial pressure
i) A patient's ABG report shows these fin	idings – pH 7.5, bicarbonate 20 minor 2, putter P
of CO2 is 55 mm Hg. Which statement	is true?
a) It is a case of respiratory acidosis w	ith renal compensation.
b) It is a case of metabolic acidosis wi	th renal compensation.
a) It is a case of metabolic acidosis wi	thout renal compensation.
d) It is a case of respiratory acidosis w	vithout renal compensation.
d) It is a case of respiratory	
" Day diagnosis of diabetes mellitus, blo	od HbA1c level should be:
11) For diagnosis of diabetes means γ	b) >/=6.4%.
a) $>/=0.5\%$.	d) >/=6.6%.
c) $>/=6.5\%$.	
t example of an example of	of:
iii) Tryptophan pyrrolase is an example	b) Dehvdrogenase.
a) Oxidase.	d) Dioxygenase.
c) Monooxygenase.	u) <i>D</i> , <i>B</i>
for Dhore	abatidyl inositol:
iv) Which one is most accurate for Phosp	b) Consists of glycerol and phosphatidic acid.
a) Absent in cell membrane.	d) A ct as 2 nd Messenger for hormones.
c) Has antigenic property.	(1) Act as 2 Messenger
	1 lastarolomia in
v) Main cause of Primary familial hyper	1) Occurrent duction of VI DL
a) Excess production of apo B.	b) Overproduction of vibil.
c) LDL receptor defect.	d) Lipoprotein lipase deficiency.
,	
vi) The tissue which cannot utilize the k	etone bodies as fuel is:
a) Cardiac muscle.	b) Liver.
a) Brain	d) Skeletal muscle.
c) Brain.	
Chucose 6 phosphatase serves as the	e marker enzyme for:
) Mitechondria	b) Peroxisome.
a) Mitochondria.	d) Lysosome.
c) Golgi apparatus.	Non-Market Contraction of the Co
with a f the following nathway is	s active in insulin glucagon ratio?
viii) which of the following patients -	b) Glycogenolysis.
a) Lipolysis.	d) Gluconeogenesis.
c) Pyruvate denydrogenase.	<i></i>
ant Cillingian in false	about the fate of Hb?
ix) Which one of the following is faise	about the face of 110.
a) 300 billion erythrocytes are desur	oyeu per day.
b) A 70 kg man turns over about 6 g	gm of Ho per day.
c) 1 gm of Hb yield 35 mg of bilirul	$\frac{1}{1}$ bin.
d) Daily bilirubin formation in hum	an adult is $250 - 550$ mg.
	1 Cintraitle annuma?
x) Which of the following enzymes is	example of inducible enzyme?
a) Glucokinase.	b) Hexokinase.
c) Aldolase.	d) Enolase.
c) microsol	
. <u>.</u>	

The West Bengal University of Health Sciences MBBS 1st Professional Examination (New Regulation), Feb- March, 2024

Subject: Biochemistry Paper : II

Full Marks: 100 Time : 3 hours

Attempt all questions. The figures in the margin indicate full marks.

1. a) A nine year old girl was brought to a physician with pallor and weakness. On examination, there was no significant finding except pallor. On investigation, haemoglobin level was found as 9 g/100ml, microcytic hypochromic erythrocytes were found, serum iron

level was low and TIBC was high. Iron deficiency anemia was diagnosed. Define anemia. Enumerate the causes of iron deficiency anemia. Describe how dietary iron is absorbed. Describe the regulation of iron absorption. Mention the dietary sources of iron.

Explain why daily iron requirement is more for women in reproductive age group. 1+3+3+3+2+3

b) An obese patient is suffering from Primary clinical hypothyroidism.

- i) Mention the principle of TSH estimation.
- ii) Prepare the lab report of thyroid function test of this patient.
- iii) Briefly describe the signal transduction of TSH & thyroid hormone.
- 2. a) Describe briefly the roles of vitamin E as antioxidant and Vitamin C in collagen

b) Describe the features of major glycosaminoglycans in respect to their locations and functions. Discuss the association of glycosaminoglycans with major diseases with ageing.

c) What are proto-oncogenes? Mention two mechanisms of activation of proto-oncogenes. Explain the role of Tumor suppressor genes in carcinogenesis. What are Tumor markers? Name two Tumor markers and diseases associated with each of them.

- 3. Write short notes on the following:
 - a) Role of MHC molecule in cell mediated immunity.
 - b) Apoptosis (with diagram).
- 4. Explain the following statements:
 - a) Certain type of DNA repair defect may lead to skin pigmentary changes.
 - b) Descreased serum T4 may be associated with increased serum TSH as well as decreased serum TSH.
 - c) A large diverge set of proteins can be formed from a limited set of genes.
 - d) Vitamin B 12 defficiency occurs in partial or total gastrectomy patients.
 - e) Resting metabolic rate (RMR) is approximately 10% higher than basal metabolic rate (BMR). P.T.O

001/23

5x4

2+3+(5+5)

2x5

10x1 -5. Choose the correct option for each of the following: i) Unusual nucleotide bases are found in significant quantities in b) t RNA a) m RNA d) Sn RNA ii) Strand of DNA from which mRNA is formed by transcription is called: b) Anti-template a) Template d) Transcript c) Coding iii) Termination is caused by all except: b) UAA a) RF-1 d) 48s complex c) Peptidy1-transferase iv) Insulin activates: b) Adipocyte HSL a) Adipocyte LPL d) Myocardial LPL v) Which of the following amino acids is utilized for conjugation reaction during metabolism of xenobiotics? b) Alanine a) Glycine d) Leucine vi) Northern blot transfer technique is utilized for visualization of: b) RNA a) DNA d) Glycoprotein c) Protein vii) Negative nitrogen balance is observed in: b) Chronic fever a) Pregnancy d) Growth period c) Convalescence viii) Xeroderma pigmentosum is caused due to defective: b) Base excision repair. a) Mismatch repair. d) Double stranded break repair. c) Nucleotide excision repair. ix) High fat low carbohydrate diet may be recommended in chronic obstructive pulmonary disease patient caused by chronic bronchitis due to: a) Fat contains more oxygen atoms related to carbon or hydrogen atoms. b) Fat is less dense than carbohydrates. c) Fat metabolism generates less CO2. d) The RQ of fat is higher RQ of carbohydrate. x) Normal anion gap acidosis occurs in: b) Lactic acidosis a) Diabetic keto acidosis d) Diarrhoea c) Chronic kidney disease