

Regular Exam

Exam Date & Time: 14-Sep-2021 (01:30 PM - 04:30 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

Human Anatomy and Physiology-II [PHA-BP201T]

Marks: 75

Duration: 180 mins.

I Multiple Choice Questions (MCQs)

Answer all the questions.

Section Duration: 30 mins

- 1) Dr. Prakash is in a process to develop a drug to target brain disorder. What would be the major physiological barrier for such types of drugs? (1)

1) Blood-Placental barrier	2) Blood-Brain barrier	3) Plasma membrane barrier	4) Intestinal blood barrier
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- 2) One of the following is an endocrine gland (1)

1) Ovaries	2) Thalamus	3) Pituitary	4) Testes
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- 3) A supporting sac made of loose skin that hangs from the root of the penis. (1)

1) Testes	2) Scrotum	3) Raphe	4) Prostate
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- 4) Which one is not an action of thyroid hormones? (1)

1) Calorigenic effect	2) Stimulates cholesterol excretion	3) Hastens tissue growth	4) Decreased basal metabolic rate
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- 5) Parathyroid hormone stimulates _____ to synthesize calcitriol (1)

1) Liver	2) Kidneys	3) Bone	4) Heart
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- 6) This dense irregular connective tissue is situated deep to germinal epithelium (1)

1) Tunica albuginea	2) Ovarian cortex	3) Ovarian medulla	4) Theca folliculi
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- 7) Papillae forming mushroom shaped elevations scattered over entire surface of tongue (1)

1) Foliate	2) Fungiform	3) Vallate	4) Filiform
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- 8) Mineralocorticoids are secreted by (1)

1) Zona glomerulosa	2) Zona reticularis	3) Zona fasciculata	4) Zona pellucida
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- 9) Interleukin-2, a local hormone exerts (1)

1) Paracrine effect	2) Autocrine effect	3) Exocrine effect	4) Both paracrine and autocrine effects
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10) When Punnett square is applied, what percentage of offspring will have *Pp* genotype in phenylketonuria?

(1)

1) 25%	2) 50%	3) 75%	4) 100%
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11) Insulin secretion is stimulated by

(1)

1) Adrenaline	2) Acetylcholine	3) Dopamine	4) Serotonin
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12) In the heart, sympathetic stimulation causes

1) Increased heart rate	2) Decreased heart rate	3) Decreased atrial contraction	4) No known effect
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(1)

13) Pineal gland, a small endocrine gland is attached to the

1) Roof of the first ventricle of the brain at the midline	2) Roof of the second ventricle of the brain at the midline	3) Roof of the third ventricle of the brain at the midline	4) Roof of the fourth ventricle of the brain at the midline
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(1)

14) Baby born to parents with AB and AB blood groups would inherit either of the possible combinations of blood type

(1)

1) A, O	2) B, O	3) A, B	4) A, B, AB
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15) Which pair of hormones exhibit antagonistic effect?

1) FSH, progesterone	2) Adrenaline, thyroxine	3) Estrogens, FSH	4) Somatocrinin, somatostatin
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(1)

16) Channel above the cochlear duct

1) Scala vestibuli	2) Scala tympani	3) Helicotrema	4) Scala media
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(1)

17) Thymus plays an important role in

1) Maturation of a particular WBC	2) Reproduction	3) Lipid metabolism	4) Platelet activation
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(1)

18) An individual with *pp* trait on chromosomes is

1) Homozygous dominant	2) Homozygous recessive	3) Heterozygous dominant	4) Heterozygous recessive
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(1)

19) Identify the amine hormone

1) Melatonin	2) Oxytocin	3) Insulin	4) Thymosin
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20)

A patient has mild ear pain, a gradual decrease in hearing, and often a constant ringing (tinnitus). The diagnosis may be

1) Bitemporal hemianopsia	2) Vertigo	3) Diabetic retinopathy	4) Second cranial nerve damage
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(1)

II Long Answers

Answer all the questions.

- 1) Explain the sequence of events that generate neuronal action potential. Describe the propagation of action potential (10)
- 2) With a neat, labelled diagram, explain the structure of an alveolus. Describe the factors affecting pulmonary ventilation (10)

III Short Answers

Answer all the questions.

- 1) Discuss the functions of kidney (5)
- 2) Describe the anatomy of an eye ball (5)
- 3) Outline the anatomy of adrenal cortex. Depicting the RAAS pathway, explain the regulation of aldosterone secretion (5)
- 4) Summarize the hormonal interactions of the ovarian and uterine cycles with a schematic representation (5)
- 5) Explain the relationship of genes to heredity citing an example (5)
- 6) A 17-year-old boy came to the emergency department showing symptoms of bradycardia, decreased BP, dyspnoea, pin point pupil, frequent urination, diarrhoea, contraction of skeletal muscles. History revealed that patient has consumed organophosphorus insecticide. Examine the symptoms and interpret how organophosphorus insecticide consumption might have resulted in these symptoms. Correlate the symptoms with autonomic nervous system giving special emphasis on receptors involved (5)
- 7) Describe the functions of hypothalamus and examine how alterations in the functions of hypothalamus may contribute to disease (5)

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