

M.B.B.S. DEGREE EXAMINATION

(For the candidates admitted from the Academic Year 2024-2025)

FIRST PROFESSIONAL – (CBME)

PAPER II – PHYSIOLOGY

Q.P. Code: 527054

Time: 20 Minutes

Maximum : 20 Marks

Answer All Questions

Shade the correct answer with Black or Blue ink ball point pen

SET - A

IV. Multiple Choice Questions:

(20 x 1 = 20)

1. A 22 year old male was brought to the Ophthalmology department for medical examination for the post of train driver. He was found to have blindness for red colour. Identify the condition
A) Protanopia B) Deutanopia C) Tritanopia D) Monochromatism
2. During inspiration
A) Intra-thoracic pressure increases B) Intra-thoracic volume increases
C) Intra-alveolar pressure increases D) Intra-alveolar volume decreases
3. Volume of air remaining in the lungs after normal expiration is
A) Residual volume B) Functional residual capacity
C) Vital capacity D) Total lung capacity
4. A 45 year old male had consumed cyanide and was brought to the tertiary care centre. He was treated with methylene blue because
A) Methylene blue destroys cyanide
B) Methylene blue forms methemoglobin
C) Methylene blue improves tissue oxygenation
D) Methylene blue causes reduction reaction in hemoglobin
5. Presence of Surfactant in the fluid lining the alveoli
A) Increases surface tension B) Increases work of breathing
C) Prevents pulmonary edema D) Causes collapse of alveoli
6. Visual acuity is greatest in
A) Fovea centralis B) Optic disc C) Ora serrata D) Optic nerve
7. Increase in the force of cardiac contraction without change in muscle length occurs by
A) Catecholamines B) Increase in end-diastolic volume
C) Infusion of isotonic saline D) Venoconstriction
8. T system in the cardiac muscle is located in
A) A-I junction B) Z-line C) M-line D) H-zone

9. A 30 year old male was advised sleep study by his physician. Which of the following finding will be present in stage II non-rapid eye movement sleep?
A) Alpha wave B) Theta rhythm C) K-complexes D) Delta wave
10. Fungiform papilla are most numerous near
A) Tip of tongue B) Side of tongue C) Posterior part of tongue D) Pharynx
11. Optic nerve leaving the eye is visible in Ophthalmoscope as
A) Macula lutea B) Fovea centralis C) Optic disk D) Ora serrata
12. First order neurons of dorsal column pathway synapse in
A) Spinal cord B) Medulla C) Pons D) Sensory cortex
13. Emotional response to olfactory stimuli is due to olfactory information reaching
A) Orbitofrontal cortex B) Amygdala
C) Entorhinal cortex D) Olfactory bulb
14. Tracking movements of the eyes as they follow moving objects are called
A) Saccadic movements B) Smooth pursuit movements
C) Vestibular movements D) Convergence movements
15. A 21 year old male fell from bike and suffered spinal injury. Imaging study revealed transection of left half of spinal cord in lumbar region. Which of the following sensation would be lost on the right lower limb?
A) Touch B) Pain C) Vibration D) Position sense
16. A 40 year old male complaining of Palpitation. If the R-R interval of this patient is 0.60 seconds in ECG, then his heart rate would be
A) 60/min B) 75/min C) 100/min D) 120/min
17. Which of the following is not a cause of neurogenic shock?
A) Septic shock B) Deep general anesthesia
C) High spinal anesthesia D) Brain damage
18. Direct effect of γ -motor discharge is
A) Contraction of extrafusal fibres
B) Contraction of ends of intrafusal fibres
C) Contraction of middle portion of intrafusal fibres
D) Relaxation of extrafusal fibres
19. A 55 year old male was diagnosed as having congestive cardiac failure with a left ventricular ejection fraction of 30%. He was advised digoxin for increasing cardiac contractility because of its ability to increase intracellular stores of
A) Sodium B) Potassium C) Calcium D) Magnesium
20. Parallel fibres in cerebellar cortex is formed by axons of _____ cells
A) Purkinje cells B) Granule cells C) Basket cells D) Stellate cells

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SET - B

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SET - C

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A) A-I junction B) Z-line C) M-line D) H-zone
2. A 30 year old male was advised sleep study by his physician. Which of the following finding will be present in stage II non-rapid eye movement sleep?
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SET - D

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SET - A

IV. Multiple Choice Questions:

(20 x 1 = 20)

- Homonymous hemianopia occurs due to lesion in
A) Retina B) Optic nerve C) Optic chiasma D) Optic tract
- A 25 year old male went for mountain trekking and he started to experience breathlessness and hyperventilation during his journey. Which of the following acid-base abnormality will occur in this person due to hyperventilation?
A) Metabolic acidosis B) Metabolic alkalosis
C) Respiratory acidosis D) Respiratory alkalosis
- Which of the following structure does not contain gap junctions?
A) Single unit smooth muscle B) Multi unit smooth muscle
C) Contractile cardiac muscle D) Electrical synapse
- 'Funny current' in the sinus node is due to
A) Na^+ influx B) Ca^{2+} influx C) Na^+ efflux D) K^+ efflux
- In lead II of electrocardiogram, positive electrode is connected to ____ and negative electrode is connected to ____
A) Left arm, right arm B) Left leg, left arm
C) Left leg, right arm D) Right arm, left leg
- A 48 year old male presented to the hospital with dizziness and fainting due to cerebral ischemia. ECG reveals third degree heart block. This condition is called
A) Stokes-Adams syndrome B) Wenckebach phenomenon
C) Wolff-Parkinson-White syndrome D) Torsades de pointes
- Bohr effect is decrease in O_2 affinity of hemoglobin when
A) pH of blood falls B) Hyperthermia occurs
C) pCO_2 falls D) H^+ ion concentration falls
- A 30 year old male was diagnosed to have an aberrant muscular conducting tissue connection called Bundle of Kent. Diagnosis is
A) Long QT syndrome B) Wolff-Parkinson-White syndrome
C) Stokes-Adams syndrome D) Cardiac failure

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SET – B

IV. Multiple Choice Questions:

(20 x 1 = 20)

1. 'Funny current' in the sinus node is due to
A) Na^+ influx B) Ca^{2+} influx C) Na^+ efflux D) K^+ efflux
2. In lead II of electrocardiogram, positive electrode is connected to ____ and negative electrode is connected to ____
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A) Long QT syndrome B) Wolff-Parkinson-White syndrome
C) Stokes-Adams syndrome D) Cardiac failure
6. Chloride shift occurs through _____ protein in the RBC membrane
A) Band 1 B) Band 3 C) Band 4.1 D) Band 4.2
7. In a 3 month old baby with congenital heart disease in which large amounts of blood are shunted from the venous to arterial side, ____ occurs
A) Hypoxic hypoxia B) Anemic hypoxia
C) Stagnant hypoxia D) Histotoxic hypoxia
8. An athlete comes for cardiac fitness examination. Choose the maximum cardiac efficiency in normal heart
A) 5 to 10% B) 20 to 25% C) 60 to 70% D) >90%

9. Which of the following is not involved in the descending pathway concerned with inhibition of pain transmission?
- A) Periaqueductal gray in midbrain B) Nucleus raphe magnus in medulla
C) Rostral ventromedial medulla D) Sensory association cortex
10. A Physician examined a head injury patient's eye. If he observed uneven size of pupil between both eyes, then such pattern of pupil called as
- A) Miosis B) Mydriasis C) Anisocoria D) Ptosis
11. Axons of _____ cells are the only output from cerebellar cortex
- A) Purkinje cells B) Granule cells C) Basket cells D) Stellate cells
12. Which of the following cranial nerves does not have parasympathetic fibres?
- A) Oculomotor nerve B) Trigeminal nerve
C) Facial nerve D) Glossopharyngeal nerve
13. Which of the following descending pathways controls distal muscles?
- A) Rubrospinal tract B) Vestibulospinal tract
C) Reticulospinal tract D) Tectospinal tract
14. Crista ampullaris is located in
- A) Utricle B) Saccule C) Semicircular canals D) Cochlea
15. Word blindness is due to lesion in
- A) Broca's area B) Wernicke's area
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16. Diffusion coefficient of each gas passing through respiratory membrane depends on
- A) Surface area B) Thickness
C) Partial pressure difference D) Solubility
17. A 72 year old male was brought to the hospital with symptoms of resting tremor, expressionless face and abnormal walking pattern with short steps. His condition is due to degeneration of
- A) Cholinergic neurons B) Adrenergic neurons
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19. A 25 year old male went for mountain trekking and he started to experience breathlessness and hyperventilation during his journey. Which of the following acid-base abnormality will occur in this person due to hyperventilation?
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SET - C

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A) Miosis B) Mydriasis C) Anisocoria D) Ptosis
- Axons of _____ cells are the only output from cerebellar cortex
A) Purkinje cells B) Granule cells C) Basket cells D) Stellate cells
- Which of the following cranial nerves does not have parasympathetic fibres?
A) Oculomotor nerve B) Trigeminal nerve
C) Facial nerve D) Glossopharyngeal nerve
- Which of the following descending pathways controls distal muscles?
A) Rubrospinal tract B) Vestibulospinal tract
C) Reticulospinal tract D) Tectospinal tract
- Crista ampullaris is located in
A) Utricle B) Saccule C) Semicircular canals D) Cochlea
- Word blindness is due to lesion in
A) Broca's area B) Wernicke's area
C) Arcuate fasciculus D) Angular gyrus
- Diffusion coefficient of each gas passing through respiratory membrane depends on
A) Surface area B) Thickness
C) Partial pressure difference D) Solubility
- A 72 year old male was brought to the hospital with symptoms of resting tremor, expressionless face and abnormal walking pattern with short steps. His condition is due to degeneration of
A) Cholinergic neurons B) Adrenergic neurons
C) Dopaminergic neurons D) Serotonergic neurons

10. Homonymous hemianopia occurs due to lesion in
A) Retina B) Optic nerve C) Optic chiasma D) Optic tract
11. A 25 year old male went for mountain trekking and he started to experience breathlessness and hyperventilation during his journey. Which of the following acid-base abnormality will occur in this person due to hyperventilation?
A) Metabolic acidosis B) Metabolic alkalosis
C) Respiratory acidosis D) Respiratory alkalosis
12. Which of the following structure does not contain gap junctions?
A) Single unit smooth muscle B) Multi unit smooth muscle
C) Contractile cardiac muscle D) Electrical synapse
13. 'Funny current' in the sinus node is due to
A) Na^+ influx B) Ca^{2+} influx C) Na^+ efflux D) K^+ efflux
14. In lead II of electrocardiogram, positive electrode is connected to ____ and negative electrode is connected to ____
A) Left arm, right arm B) Left leg, left arm
C) Left leg, right arm D) Right arm, left leg
15. A 48 year old male presented to the hospital with dizziness and fainting due to cerebral ischemia. ECG reveals third degree heart block. This condition is called
A) Stokes-Adams syndrome B) Wenckebach phenomenon
C) Wolff-Parkinson-White syndrome D) Torsades de pointes
16. Bohr effect is decrease in O_2 affinity of hemoglobin when
A) pH of blood falls B) Hyperthermia occurs
C) pCO_2 falls D) H^+ ion concentration falls
17. A 30 year old male was diagnosed to have an aberrant muscular conducting tissue connection called Bundle of Kent. Diagnosis is
A) Long QT syndrome B) Wolff-Parkinson-White syndrome
C) Stokes-Adams syndrome D) Cardiac failure
18. Chloride shift occurs through _____ protein in the RBC membrane
A) Band 1 B) Band 3 C) Band 4.1 D) Band 4.2
19. In a 3 month old baby with congenital heart disease in which large amounts of blood are shunted from the venous to arterial side, ____ occurs
A) Hypoxic hypoxia B) Anemic hypoxia
C) Stagnant hypoxia D) Histotoxic hypoxia
20. An athlete comes for cardiac fitness examination. Choose the maximum cardiac efficiency in normal heart
A) 5 to 10% B) 20 to 25% C) 60 to 70% D) >90%

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[MBBS 0726]

JULY 2026

Sub. Code: 7054

M.B.B.S. DEGREE EXAMINATION

(For the candidates admitted from the Academic Year 2024-2025 & 2025-2026)

FIRST PROFESSIONAL – (CBME)

PAPER II – PHYSIOLOGY

Q.P. Code: 527054

Time: 20 Minutes

Maximum : 20 Marks

Answer All Questions

Shade the correct answer with Black or Blue ink ball point pen

SET – A

IV. Multiple Choice Questions:

(20 x 1 = 20)

1. Stimulation of vagus nerve leads to:
A) Increased force of ventricular contraction B) Increased heart rate
C) Increased rate of conductivity D) Decreased SA node activity
2. Which of the following most accurately estimates Mean Arterial Pressure (MAP)?
A) (Systolic blood pressure + Diastolic blood pressure) / 2
B) Diastolic blood pressure + 1/3 (Systolic blood pressure – Diastolic blood pressure)
C) 2/3 Systolic blood pressure + 1/3 Diastolic blood pressure
D) Systolic blood pressure – Diastolic blood pressure
3. A 45 years old male presents with severe left sided chest pain for the past 1 hour. The treating physician orders an immediate ECG. PR interval on ECG represents:
A) Atrial depolarization
B) Ventricular depolarization
C) Time from atrial depolarization to ventricular depolarization
D) Atrial repolarization
4. Reynolds number > 2000 indicates:
A) Increased plasma protein concentration B) Increased laminar flow
C) Turbulent blood flow D) Decreased flow velocity
5. 65 years old Ram attends his regular monthly visit to his Physician. He is a hypertensive on irregular medications. The BP was recorded as 140/120mmHg. The physician explain the cause of high diastolic BP to his interns. Which of the following vessels contributes major site of resistance to blood flow?
A) Aorta B) Arterioles C) Capillaries D) Venules
6. Which condition is associated with increased lung compliance?
A) Emphysema B) Tuberculosis C) Pulmonary fibrosis D) Silicosis
7. What is the normal partial pressure of O₂ in alveolar air (PAO₂)?
A) 104 mm Hg B) 95 mm Hg C) 40 mm Hg D) 159 mm Hg
8. What is the approximate anatomical dead space in a healthy adult?
A) 50 mL B) 150 mL
C) 100 mL D) 250 mL

9. 30 years old college student, on trekking to higher altitudes complaints of dizziness, mild headache and nausea. A diagnosis of hypoxia is made and treated immediately. Hypoxia in pulmonary alveoli causes:
A) Vasodilation of pulmonary vessels B) Vasoconstriction of pulmonary vessels
C) Bronchodilation D) Systemic hypertension
10. 45 years old Beema was stuck in a fire accident and she was prone for inhaling the fumes for a prolonged duration. After admission, her condition worsened and was diagnosed as Type II respiratory failure. This is characterized by:
A) Hypoxemia only B) Hypocapnia
C) Hypercapnia and hypoxemia D) Alkalosis
11. During the depolarization phase of a neuron action potential:
A) K^+ conductance increases B) Na^+ channels close
C) Na^+ influx occurs D) Cl^- channels open
12. The main source of cerebrospinal fluid is:
A) Arachnoid villi B) Choroid plexus
C) Ependymal lining D) Cerebral capillaries
13. Gamma motor neurons innervate:
A) Extrafusal muscle fibers B) Golgi tendon organs
C) Intrafusal muscle fibers D) Pacinian corpuscles
14. Memory Consolidation occurs in:
A) Hypothalamus B) Hippocampus C) Cerebellum D) Caudate nucleus
15. Lateral Spinothalamic tract carries:
A) Proprioception B) Fine touch
C) Pain and temperature D) Vibration sense
16. EEG in REM Sleep shows
A) Slow waves B) Alpha rhythm C) Delta waves D) Beta waves
17. Rods are specialized for
A) Daylight vision B) Sharp color vision
C) Low-light peripheral vision D) Depth perception
18. Basilar Membrane encodes frequency by:
A) Electrical conduction B) Chemical sensitivity
C) Tonotopic arrangement D) Vibration amplitude
19. Stapedius Reflex function:
A) Enhances sound sensitivity B) Prevents cochlear damage from loud sound
C) Vibrates tympanic membrane D) Opens Eustachian tube
20. Following RTA, a patient recovered partially but he lost the ability to taste. This is called was
A) Hypogeusia B) Ageusia C) Dysguesia D) Parageusia

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

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FIRST PROFESSIONAL – (CBME)

PAPER II – PHYSIOLOGY

Q.P. Code: 527054

Time: 20 Minutes

Maximum : 20 Marks

Answer All Questions

Shade the correct answer with Black or Blue ink ball point pen

SET – B

IV. Multiple Choice Questions:

(20 x 1 = 20)

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A) 50 mL B) 150 mL
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2. 30 years old college student, on trekking to higher altitudes complaints of dizziness, mild headache and nausea. A diagnosis of hypoxia is made and treated immediately. Hypoxia in pulmonary alveoli causes:
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...2...

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THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[MBBS 0726]

JULY 2026

Sub. Code: 6054

M.B.B.S. DEGREE EXAMINATION

(For the candidates admitted from the Academic Year 2022 – 2023 & 2023 – 2024)

FIRST PROFESSIONAL – (CBME)

PAPER II – PHYSIOLOGY

Q.P. Code: 526054

Time: 20 Minutes

Maximum : 20 Marks

Answer All Questions

Shade the correct answer with Black or Blue ink ball point pen

SET - C

III. Multiple Choice Questions:

(20 x 1 = 20)

1. Function of Preoptic nucleus of Hypothalamus

A) Gastric stimulation

B) Temperature regulation

C) Thirst

D) Satiety center

2. All of the following are properties of synapse except

A) All or none law

B) Law of forward conduction

C) Fatigue occurs at synapse

D) more susceptible to hypoxia than nerve fibres

3. Prominent U wave could be a feature of

A) Hypernatremia

B) Hyponatremia

C) Hyperkalemia

D) Hypokalemia

4. The repeated sequence of gradual onset of apnea followed by gradual restoration of respiration is called

A) Biot's breathing

B) Cheyne stokes breathing

C) Kussmaul's breathing

D) Sleep Apnea syndrome

5. All of the following occur during near response except

A) Contraction of Ciliary muscle

B) Constriction of pupil

C) Contraction of suspensory ligaments

D) Convergence of visual axes

6. Minimum intensity of sound that the human ear can perceive in a noise free environment is

A) 0 dB

B) 20 dB

C) 60 dB

D) 100 dB

7. Cushing's reflex helps in maintaining

A) Coronary blood flow

B) Cutaneous blood flow

C) Hepatic blood flow

D) Cerebral blood flow

8. Percentage of Oxygen in expired air is

A) 21%

B) 16%

C) 19%

D) 14%

9. What is Haldane effect?
A) Loading of CO₂ to the blood causes unloading of O₂
B) Loading of O₂ to the blood causes unloading of CO₂
C) Binding of CO to hemoglobin displaces O₂
D) Decrease in O₂ affinity of hemoglobin when pH of blood falls
10. Which of the following is the muscle of inspiration?
A) External intercostal B) Internal intercostal
C) Transverse abdominis D) External oblique
11. Rate of impulse conduction is highest in
A) Sinoatrial node B) Atrioventricular node
C) Purkinje fibres D) Bundle of His
12. Cardiac output decreases in
A) After eating B) Pregnancy C) Exercise D) Standing from lying posture
13. Wernicke's area is
A) Area 22 B) Area 44, 45 C) Area 3, 1, 2 D) Area 4
14. For stretch reflex, receptor is
A) Golgi tendon organ B) Muscle spindle
C) Otolith organ D) Photoreceptors
15. All of the following result in O₂-dissociation curve shift to right except
A) Increase in temperature B) Increase in 2,3DPG
C) Increase PCO₂ D) Increased pH
16. Critical closing pressure is defined as
A) The pressure in ventricles at which A-v valve closes
B) The pressure in ventricles at which semilunar valve closes
C) Pressure within the alveoli at which small airway closes
D) The pressure in small blood vessels at which flow ceases
17. Inability to perform alternate movements rapidly is called
A) Rebound phenomenon B) Intentional tremor
C) Adiadochokinesia D) Resting tremor
18. The attempts of an animal to get into an upright position when laid on its side
A) Labyrinthine reflexes B) Righting reflex
C) Tonic neck reflex D) Vestibular placing reaction
19. Which of the following property can ideally be studied in quiescent heart?
A) Staircase phenomenon B) Distensibility
C) Excitability D) Autorhythmicity
20. Waterfall effect in pulmonary circulation is seen in
A) Upper zone B) Lower zone C) Middle zone D) Posterior zone

M.B.B.S. DEGREE EXAMINATION

(For the candidates admitted from the Academic Year 2024 -2025 & 2025-2026)

FIRST PROFESSIONAL – (CBME)

PAPER I - ANATOMY

Q.P. Code: 527051

Time: 20 Minutes

Maximum : 20 Marks

Answer All Questions

Shade the correct answer with Black or Blue ink ball point pen

SET - D

IV. Multiple Choice Questions:

(20 x 1 = 20)

1. A 35 year old male came to surgery OPD with complaints of painless swelling in the tip of penis for 1 month. He was diagnosed with carcinoma of penis. What is the lymphatic drainage of glans penis?
A) Superficial inguinal lymph nodes B) Internal iliac lymph nodes
C) Deep inguinal lymph nodes D) Para aortic lymph nodes
2. One of the following is a content of adductor canal
A) Obturator Nerve B) Popliteal artery
C) Sural nerve D) Popliteal vein
3. One of the following is a remnant of notochord
A) Annulus fibrosus B) Nucleus pulposus
C) Alar ligament of dens D) Transverse ligament
4. Which one of the following is true about lateral meniscus?
A) Semilunar in shape
B) Attached to fibular collateral ligament
C) Posterior horn provides attachment to meniscomfemoral ligament
D) Most commonly injured
5. Internal haemorrhoids is due to varicosities of tributaries of
A) Inferior rectal vein B) Internal pudendal vein
C) Superior rectal vein D) Middle rectal vein
6. Tendoachilles is inserted into
A) Talus B) Cuboid C) Navicular D) Calcaneum
7. Gemellus inferior is innervated by
A) Superior gluteal nerve B) Nerve to obturator internus
C) Inferior gluteal nerve D) Nerve to quadratus femoris
8. Epiploic foramen is superiorly bounded by
A) Caudate process B) Papillary process
C) Quadrate lobe D) Porta hepatis
9. First carpometacarpal joint is
A) Ellipsoid type of synovial joint B) Saddle type of synovial joint
C) Condylar type of synovial joint D) Pivot type of synovial joint

10. Modified endothelial cells lining the splenic sinusoids are called as
A) Pericytes
B) Type I epitheliocytes
C) Stave cells
D) Reticulocytes
11. Nutrient artery to tibia arises from
A) Popliteal artery
B) Anterior tibial artery
C) Peroneal artery
D) Posterior tibial artery
12. Left ovarian vein drains into
A) Left renal vein
B) Interior vena cava
C) Left inferior phrenic nerve
D) Left Inferior suprarenal vein
13. A 32 year old male, a chronic smoker presented with burning epigastric pain daily 2-3 hrs after a meal. He was diagnosed with duodenal ulcer based on clinical findings. First part of duodenum is commonly affected by ulcers. Why?
A) Supplied by end arteries
B) Fixed part
C) Circular mucosal folds are more
D) Few crypts of lieberkuhn
14. Most common position of appendix
A) Paracolic
B) Promontoric
C) Pelvic
D) Retrocaecal
15. All of the following are developed from pre allantoic part of hindgut except
A) Distal 3rd of transverse colon
B) Descending colon
C) Sigmoid colon
D) Rectum
16. A 18-year-old boy fell down from motorcycle on his shoulder. The doctor diagnosed him as a case of Erb's paralysis. All the following signs are present in this patient except
A) Adduction of shoulder
B) Medial rotation of shoulder
C) Extension of elbow
D) Supination of forearm
17. A 32 year old male developed shooting pain that radiated along the back of thigh, posterolateral aspect of the leg and foot after taking IM injection at gluteal region. Which nerve is injured in this condition?
A) Femoral nerve
B) Sciatic nerve
C) Obturator nerve
D) Saphenous nerve
18. One of the following structures is related to the base of urinary bladder
A) Vas deferens
B) Urethra
C) Puboprostatic ligament
D) Ejaculatory duct
19. One of the following is a content of femoral sheath
A) Femoral nerve
B) Nerve to pectineus
C) Ilioinguinal nerve
D) Femoral branch of genito femoral nerve
20. Which one of the following is associated with external oblique muscle
A) Conjoint tendon
B) Superficial inguinal ring
C) Cremasteric muscle
D) Internal spermatic fascia