

M.P.T. FIRST YEAR EXAMINATION, JUNE/JULY - 2013
APPLIED PHYSIOTHERAPY
PAPER FIRST

[Time allotted: Three hours]

[Max. Marks: 70]

Note: Attempt all questions

Draw suitable diagrams wherever necessary.

A: Short answer questions

(7 x 9 = 63)

- Q. 1. Discuss the differences in PNF techniques of Stabilizing Reversals & Rhythmic Stabilization.
- Q. 2. Amplitude modulated frequency (AMF) & Frequency sweep of Interferential currents. Its effects on treatment in light of clinical evidence.
- Q. 3. "Controlled Damage" and proposed mechanism of long term length changes in tissues during stretching procedures.
- Q. 4. Physiological effects of cold on tissues
- Q. 5. Modulation of pain transmission.
- Q. 6. Elaborate the principles of Alexander's technique of relaxation and cite clinical evidence for its effectiveness.
- Q. 7. Nomenclature & types of electrical stimulation and its usefulness.
- Q. 8. Elaborate determinants of gait.
- Q. 9. Elaborate the characteristics of the Open and Closed chain exercises. Highlight the rationale for selection of Open and Closed chain exercises based on clinical evidence citing an example.

M.P.T. FIRST YEAR EXAMINATION, JUNE/JULY - 2013**APPLIED PHYSIOTHERAPY****PAPER FIRST (MCQ)****Time allotted for MCQ- 15 minutes****B : MCQs (Single response type):****(½ x 14 = 7)**

Select the most appropriate answer and encircle the alphabet against it

1. Which amongst these is not a component of movement capabilities of coordination assessment?
 - a. Movement Accuracy
 - b. Movement composition
 - c. Postural Stability
 - d. Postural Perturbations
2. During the examination of gait, the therapist observes, lateral pelvic tilt on the side of swing leg during frontal plane analysis. This finding functions to
 - a. Control forward and backward rotation of pelvis
 - b. Reduce peak rise of pelvis
 - c. Reduce physiological valgum of knee
 - d. Reduce knee flexion at midstance
3. Which amongst these is not a feature of attentional deficit in Balance
 - a. Interference of anticipatory postural control
 - b. Distractibility
 - c. Reduced awareness of environmental hazards and opportunities
 - d. None of them.
4. Patient with chronic cervical pain is referred to Physiotherapy OPD. Past medical history reveals: appendectomy, 12 yrs ago; chronic heart disease; demand type pacemaker, 8 yrs ago; whiplash injury 2yrs ago. Presently c/o pain & muscle spasm in cervical region. Modality that should not be considered for treatment in this case is
 - a. Mechanical traction
 - b. Hot Pack
 - c. Ultrasound
 - d. Transcutaneous Electrical Stimulation
5. A patient demonstrates quadriceps weakness (4/5) and difficulty descending stairs. Best intervention to regain functional strength in the quadriceps is
 - a. Isokinetic ex's, at 36 degrees/ sec
 - b. Partial squats progressing to lunges
 - c. Progressive Resistive ex's, 70% 1RM, 3 sets of 10
 - d. Isometric ex, at 45 & 90 degrees of knee extension.
6. A patient suffers an inversion sprain of right ankle affecting calcaneofibular & anterior talofibular ligaments, 2 months back. On presentation, ankle is still painful, very limited in ROM and slightly tender in touch. As part of treatment, ultrasound treatment parameters should consist of
 - a. Continuous US at 1MHz
 - b. Pulsed US at 1MHz
 - c. Continuous US at 3MHz
 - d. Pulsed US at 3MHz
7. Most efficient intervention to regain biceps brachii strength if the muscle is chronically inflamed & has painful arc of motion is
 - a. Isometric ex's at end of ROM
 - b. Active concentric contraction through partial ROM
 - c. Active eccentric contractions in painfree range.
 - d. Isokinetic ex's through full ROM.
8. Acute effects of exposure to UVC & UVB are
 - a. Cataract
 - b. Erythema
 - c. Hyperplasia
 - d. Photokeratitis & Conjunctivitis
9. Infrared C radiation, classification based on degree to which they are absorbed by biological tissue & subsequent effects has a spectral value
 - a. 0.78 -1.4 MU microns
 - b. 3.0 – 1.0 mm
 - c. 1.8 – 1.0 mm
 - d. 1.4 – 3.0 MU microns
10. When superficial contact heat is applied, the surface tissue temperature changes & is dependent on these factors. Which amongst these is not such a factor.
 - a. Size of area exposed to heat
 - b. Blood circulation in the area
 - c. Intensity of heat
 - d. Thermal medium
11. Jacobson (1938) proposed that the release of tension in the skeletal musculature had the effect of
 - a. Loss of muscle tone
 - b. Freeing the mind & soul
 - c. Calming the mind
 - d. Progressive relaxation
12. IPNF association definition that “ the motion prevented by an outside force (resistance) when the intent of the patient is motion” is for
 - a. Isometric
 - b. Stabilizing Isotonic
 - c. Isotonic
 - d. Eccentric isotonic
13. In an efficient state, Core enables each structural component to operate
 - a. Optimally through distribution of weight, Absorption of force & transfer of ground reaction forces
 - b. Optimally through distribution of weight & Absorption of force
 - c. Maximally through distribution of weight, Absorption of force & transfer of ground reaction forces
 - d. Incrementally through distribution of weight, Absorption of force & transfer of ground reaction forces
14. Aim of conventional TENS is to :
 - a. Stimulate non noxious large diameter fibers.
 - b. Activate motor efferent to produce phasic muscle twitch.
 - c. Activate small diameter “pin prick” cutaneous afferents.
 - d. All of the above

M.P.T. FIRST YEAR EXAMINATION, JUNE/JULY - 2013**APPLIED BIOMECHANICS AND ERGONOMICS****PAPER TWO****[Time allotted: Three hours]****[Max. Marks: 70]**

Note: Attempt all questions

Draw suitable diagrams wherever necessary.

A: Short answer questions**(7 x 9 = 63)**

Write short notes on:

Q. 1. Attempt any one:

- a. Explain effects of different types of stress on bones with respect to fracture mechanics. (for Ortho)
- b. Explain the different types of principles used in cardiopulmonary biomechanics (for Cardio)
- c. Discuss the neural biomechanics of slump and modified slump test (for Neuro)

Q. 2. Describe joint kinematics during a normal gait cycle in different planes.**Q. 3.** What is muscle fatigue? Also describe about it's EMG changes.**Q. 4.** Explain the effects of immobilization, temperature and age on tendons and ligaments.**Q. 5.** Explain in detail about dynamic analysis of movements.**Q. 6.** Short notes:**(3+4=7)**

- a. Mechanical energy storage
- b. Moment arm and it's significance

Q. 7. Define the layers of thoracolumbar fascia. Also explain factors responsible for the stability of sacroiliac joint.**Q. 8.** A 34 year female complaining pain and fatigue at interscapular area while performing activity at 90° of shoulder abduction for 30 sec. determine the stage of musculoskeletal disorder, muscles involved and recovery time for the same.**Q. 9.** Explain stress distribution on cortical bone in hip arthroplasty and its relative importance.

M.P.T. FIRST YEAR EXAMINATION, JUNE/JULY - 2013
APPLIED BIOMECHANICS AND ERGONOMICS
PAPER TWO (MCQ)

Time allotted for MCQ- 15 minutes

B : MCQs (Single response type):

(½ x 14= 7)

Select the most appropriate answer and encircle the alphabet against it

1. The moment arm of deltoid is larger at:
 - a. 300
 - b. 600
 - c. 900
 - d. 1200
2. The connective tissue structure of ligaments is dense white bands except for:
 - a. Ligamentum nuchae
 - b. Tendo Achilles
 - c. Ligamentum flavum
 - d. Ligamentum patellae
3. The first rib and sternum are connected by
 - a. Fibrocartilage
 - b. Hyaline cartilage
 - c. Meniscus
 - d. Fibrous tissue
4. Shoulder abduction involves:
 - a. Superior rolling and inferior slide
 - b. Superior rolling and superior slide
 - c. Inferior rolling and inferior slide
 - d. Inferior rolling and superior slide
5. Large diameter skeletal muscle fiber found in:
 - a. Type I
 - b. Type IIa
 - c. Type IIb
 - d. None of these
6. Osteolytic patches appearing in vertebral end plates known as:
 - a. Osteogenic sarcoma
 - b. Osteochondritis
 - c. Schmorl nodes
 - d. Scheurmann disease
7. Which type of lubrication occurs ,when movement of articular surfaces are perpendicular to each other,
 - a. Boundary
 - b. Weeping
 - c. Squeeze film
 - d. Boosted
8. The property of synovial fluid , where the viscosity varies inversely with joint velocity;
 - a. Isotropic
 - b. Anisotropic
 - c. Cohesive
 - d. Thixotropic
9. Within bicipital groove, the biceps tendon is tethered by which ligament ,
 - a. Middle glenohumeral ligament
 - b. Trapezoid ligament
 - c. Acromioclavicular ligament
 - d. Transverse humeral ligament
10. During heel strike; center of pressure is _____ to the midpoint of heel.
 - a. Medial
 - b. Lateral
 - c. Anterior
 - d. Posterior
11. Walking speed is:
 - a. Temporal variable
 - b. Spatial variable
 - c. Both of these
 - d. None of these
12. Up to 30% of ascending stair gait cycle, muscle contraction occurs is:
 - a. Isometric
 - b. Eccentric
 - c. Concentric
 - d. All of them
13. The Double limb support during normal gait is:
 - a. 5%
 - b. 10%
 - c. 15%
 - d. 20%
14. In bilateral cervical rotation; visual field appears to be:
 - a. 900
 - b. 1800
 - c. 2700
 - d. 3600

M.P.T. FIRST YEAR EXAMINATION, JUNE/JULY -2013**APPLIED BASIC MEDICAL SCIENCES (ORTHO)****PAPER THREE****[Time allotted: Three hours]****[Max. Marks: 70]**

Note: Attempt all questions

Draw suitable diagrams wherever necessary.

A: Short answer questions**(7 x 7 = 49)****ANATOMY****Q. 1.** Write short notes on Hamstrung group of muscles.**Q. 2.** Write short notes on Brachial plexus.**PHYSIOLOGY****Q. 3.** Classify nerve fibres and write about the effects of injury on them.**Q. 4.** Describe skeletal muscle metabolism.**PATHOLOGY****Q. 5.** Discuss various cell adaptations with examples.**Q. 6.** Write short notes on:

- Phagocytosis
- HLA

PHARMACOLOGY**Q. 7.** Write short notes on:

- Therapeutics uses and contraindication of corticosteroids
- Diclofenac sodium
- Rationales of use of Ncostigmins in Myasthenia gravis.
- Contraindications of morphine

P.T.O.

M.P.T. FIRST YEAR EXAMINATION, JUNE/JULY -2013
APPLIED BASIC MEDICAL SCIENCES (ORTHO)
PAPER THREE (MCQ)

Time allotted for MCQ- 15 minutes

B : MCQs (Single response type):

(½ x 42= 21)

ANATOMY

1. Greater trochanter of femur is an example of :
 - a. Pressure epiphysis
 - b. Traction epiphysis
 - c. Atavistic epiphysis
 - d. Aberrant epiphysis
2. The following long bone has the earliest primary centre of ossification:
 - a. Scapula
 - b. Hip bone
 - c. Clavicle
 - d. Calcaneum
3. All are features of skeletal muscles EXCEPT:
 - a. Long, cylindrical fibres
 - b. Nuclei are peripherally situated
 - c. Presence of cross striations
 - d. Presence of branching of muscle fibres
4. The following appendage is absent in non hairy skin:
 - a. Sebaceous gland
 - b. Sweat gland
 - c. Hypodermis
 - d. Papillary layer of dermis
5. Ulnar nerve is a branch of:
 - a. Erb's point
 - b. Lateral cord of brachial plexus
 - c. Medial cord of brachial plexus
 - d. Lowest trunk of brachial plexus
6. Supination and pronation movements of forearm occur at:
 - a. Elbow joint
 - b. Wrist joint
 - c. Radioulnar joint
 - d. 1st carpometacarpal joint
7. Femoral artery:
 - a. Is present outside the femoral sheath
 - b. Is a continuation of popliteal artery
 - c. Is continued as popliteal artery
 - d. Is an end artery
8. Foot drop is due to lesion in:
 - a. Anterior tibial nerve
 - b. Superficial peroneal nerve
 - c. Common peroneal nerve
 - d. Medial plantar nerve
9. Foramina transversaria are present in:
 - a. Cervical vertebrae
 - b. Thoracic vertebrae
 - c. Lumbar vertebrae
 - d. Sacral vertebrae
10. The following muscle lies at the junction of anterior and posterior triangles of neck region:
 - a. Trapeus
 - b. Sternocleidomastoid
 - c. Platysma
 - d. Scaleneus anterior
11. Maxillary air sinus opens in:
 - a. Inferior meatus
 - b. Middle meatus
 - c. Superior meatus

- d. Highest meatus
12. Deltoid muscle is supplied by:
 - a. Radial nerve
 - b. Axillary nerve
 - c. Ulnar nerve
 - d. Median nerve

PHYSIOLOGY

13. Myelin is composed of:
 - a. A double layer of lipid molecules with proteins embedded in it
 - b. Two lipid layers sandwiched between three protein layers
 - c. Many layers of unit membranes
 - d. A single layer of cell membrane
14. Propagation of an impulse in one direction along axon to its termination is called:
 - a. Antidromic conduction
 - b. Orthodromic conduction
 - c. Antegrade conduction
 - d. Saltatory conduction
15. Pain carrying fibres are:
 - a. Aα, Aβ
 - b. Aα, C
 - c. Aδ, C
 - d. Aδ, Aα
16. Complete transection of a nerve is:
 - a. 1^o injury
 - b. 3^o injury
 - c. 5^o injury
 - d. 7^o injury
17. After injury to a nerve, its ability to conduct an impulse is lost completely:
 - a. Immediately
 - b. After 24 hours
 - c. After 3rd day
 - d. After 5th day
18. Neuroroma is:
 - a. A cancerous conduction in nerve fibers
 - b. Degenerative and regenerative change in peripheral nerves after injury
 - c. Painful collection of nerve fibers at the site of injury
 - d. An area of anaesthesia following sensory nerve damage
19. At neuromuscular junction the following transmitter is released:
 - a. Acetylcholine
 - b. Bradykinin
 - c. Histamine
 - d. Serotonin
20. ATPase activity is located on:
 - a. Myosin shaft
 - b. Myosin tail
 - c. Myosin head
 - d. All of the above

P.T.O.

21. In skeletal muscle, the:
 - a. Contraction precedes the action potential
 - b. Action potential lasts as long as contraction
 - c. Action potential lasts longer than the contraction
 - d. Action potential precedes the contraction
22. A motor neuron includes:
 - a. Sensory nerve and the muscle fiber that it supplies
 - b. A motor nerve and the muscle fiber that it supplies
 - c. All the muscle fibers supplied by a single nerve
 - d. Action potential horn cell along with its motor nerve
23. Muscle fatigue is due to:
 - a. Long latency
 - b. Low ATPase activity
 - c. Slow contraction of a muscle
 - d. Inadequate supply of ATP
24. For muscle contraction the energy provided by:
 - a. Stored ATP
 - b. Stored glycogen
 - c. Creatine phosphate
 - d. All of the above

PATHOLOGY

25. Earliest organelle to dilate in cell injury is –
 - a. ER
 - b. Golgi Body
 - c. Lysosome
 - d. Nucleus
26. After reperfusion there is increased uptake of –
 - a. Ca
 - b. Na
 - c. K
 - d. Cl
27. Necrosis in brain is –
 - a. Caseous Necrosis
 - b. Coagulative necrosis
 - c. Liquefactive Necrosis
 - d. Enzymic Necrosis
28. Inflammatory fluid rich in leukocytes and parenchymal debris is called –
 - a. Exudate
 - b. Transudate
 - c. Pus
 - d. Edema fluid
29. Earliest event to occur in acute inflammation is –
 - a. Transient vasodilatation
 - b. Vasoconstriction
 - c. Margination
 - d. Increased permeability
30. Proud flesh is another name for –
 - a. Desmoids
 - b. Fibromatosis
 - c. Exuberant granulation tissue
 - d. Hypertrophic Scar
31. NK cells are actually –
 - a. Lymphocytes
 - b. Macrophages
 - c. Neutrophils
 - d. Monocytes
32. AIDS virus belongs to –
 - a. Lassavirus
 - b. Lentivirus
 - c. Poxvirus
 - d. Myxovirus

33. Hyperacute graft rejection occurs due to –
 - a. Neutrophils
 - b. Monocytes
 - c. Preformed antibodies
 - d. Lymphocytes
34. Osteitis fibrosa cystica is a feature of –
 - a. Paget's disease
 - b. Renal Osteodystrophy
 - c. Hyperparathyroidism
 - d. Marble bone disease
35. Unmineralised bone is called –
 - a. Woven bone
 - b. Callus
 - c. Lamellar bone
 - d. Osteoid
36. Which vitamin deficiency causes osteoporosis –
 - a. A
 - b. C
 - c. B
 - d. E

PHARMACOLOGY

37. Therapeutic index is a measure of:
 - a. Efficacy
 - b. Safety
 - c. Potency
 - d. Selectivity
38. Which type of drugs penetrate CNS better?
 - a. Lipid soluble
 - b. Weak bases
 - c. Weak acids
 - d. All equally
39. Hofmann elimination is associated with
 - a. Succinylcholine
 - b. Rocuronium
 - c. d-Tubocurarine
 - d. Atracurium
40. Uricosuric agent used for gout is
 - a. Allopurinol
 - b. Probenecid
 - c. Colchicine
 - d. NSAIDs
41. Local anesthetic acts by blocking
 - a. Na⁺ channel
 - b. K⁺ channel
 - c. Ca²⁺ channel
 - d. Cl⁻ channel
42. Identify the selective COX-2 inhibitor
 - a. Rofecoxib
 - b. Nimesulide
 - c. Ibuprofen
 - d. Piroxicam

M.P.T. FIRST YEAR EXAMINATION, JUNE/JULY - 2013**APPLIED BASIC MEDICAL SCIENCES (NEURO)****PAPER THREE****[Time allotted: Three hours]****[Max. Marks: 70]**

Note: Attempt all questions

Draw suitable diagrams wherever necessary.

A: Short answer questions**(7 x 7 = 49)**

- Q. 1.** Write short notes on Fourth ventricle.
- Q. 2.** Write short notes on Meninges of spinal cord.
- Q. 3.** Draw a well labeled diagram of descending pathway and enumerate the functions of hypothalamus.
- Q. 4.** What is stretch reflex and describe structure of muscle spindle?
- Q. 5.** a. List the organism causing meningitis. Discuss septic meningitis. (4)
b. Write a short note on Parkinsonism. (3)
- Q. 6.** Discuss cerebral infarction.
- Q. 7.** a. Name the drugs that can be used as analgesics.(3)
b. Give three uses/ Indications for use of each (2+2=4)
i. Morphine
ii. NSAIDs

M.P.T. FIRST YEAR EXAMINATION, JUNE/JULY - 2013
APPLIED BASIC MEDICAL SCIENCES (NEURO)
PAPER THREE (MCQ)

Time allotted for MCQ- 40 minutes

B : MCQs (Single response type):

(½ x 42= 21)

Anatomy

1. Third ventricle is a cavity in:
 - a. Enencephalon
 - b. Diencephalons
 - c. Metencephalon
 - d. Myelencephalon
2. The basilar artery is present on the ventral surface of:
 - a. Medulla oblongata
 - b. Pons
 - c. Midbrain
 - d. None of the above
3. All the following cranial nerves are involved in carrying taste sensation from the tongue EXCEPT:
 - a. Facial nerve
 - b. Glossopharyngeal nerve
 - c. Vagus nerve
 - d. Hypoglossal nerve
4. Lateral ventricle communicates to the IIIrd ventricle by:
 - a. Foramen of Monro
 - b. Aqueduct of Sylvius
 - c. Foramen of Magendie
 - d. Foramen of Luschka
5. All are features of cerebellar lesion EXCEPT:
 - a. Hypotonia
 - b. Rigidity
 - c. Dysidiadochokinesis
 - d. Nystagmus
6. The part of the brain bounded between the parieto-occipital sulcus and calcarine fissure is called :
 - a. Cuneus
 - b. Precuneus
 - c. Parietal lobule
 - d. Uncus
7. The major source of arterial supply to the spinal cord is from:
 - a. Anterior spinal artery
 - b. Posterior spinal artery
 - c. Segmental arteries
 - d. Arteria radicularis magna
8. Nucleus ambiguus is the motor nucleus for:
 - a. Facial nerve
 - b. III, IV and VI cranial nerves
 - c. IX, X and XI cranial nerves
 - d. Hypoglossal nerve
9. Macular area of vision lies in:
 - a. Parietal lobe
 - b. Temporal lobe
 - c. Occipital lobe
 - d. Frontal lobe
10. Extradural haemorrhage is due to rupture of:
 - a. Middle meningeal vessels
 - b. Superior cerebral veins
 - c. Middle cerebral artery
 - d. Central arteries
11. Corpus callosum is an example of:
 - a. Commissural fibres
 - b. Association fibres

- c. Projection fibres
- d. None of the above
12. The tip of the nose is supplied by:
 - a. Ophthalmic nerve
 - b. Maxillary nerve
 - c. Mandibular nerve
 - d. Great auricular nerve

Physiology

13. Rapid eye movement during sleep:
 - a. Is associated with fast waves with high frequency and low amplitude
 - b. Is termed paradoxical sleep
 - c. Is associated with tremendous reduction in muscle tone
 - d. All of the above
14. Dorsal column-medial lemniscal pathway:
 - a. Carries sense of temperature to the cortex
 - b. Carries sense of crude touch and pain to cortex
 - c. Carries sensation of fine touch, vibration and proprioception
 - d. Does not help in detecting movement of different parts
15. Reflexes are:
 - a. Consists of afferent and efferent fibres and the centre
 - b. For stretch reflex is monosynaptic
 - c. For withdrawal reflex is polysynaptic
 - d. All of the above
16. Decerebrate rigidity can be produced by transecting the brain stem at:
 - a. Spinomedullary junction
 - b. Pontomedullary junction
 - c. Midbrain between two colliculi
 - d. None
17. Dysmetria:
 - a. Occurs in cerebellar damage
 - b. Is inability to speak
 - c. Loss of ability to do rapid movements
 - d. All of the above
18. Basal ganglia include:
 - a. Only corpus striatum
 - b. Caudate nucleus, putamen and globus pallidus only
 - c. Corpus striatum, subthalamic nucleus and substantia nigra
 - d. Globus pallidus only
19. Tremors of Parkinsonism:
 - a. Occur during sleep
 - b. Occur in waking hours
 - c. Occur both in waking hours as well as sleep
 - d. Are called intention tremor
20. Upper motor neurone extends up to:
 - a. Anterior horn of spinal cord
 - b. Internal capsule
 - c. Medulla
 - d. None

P.T.O.

21. It is not a part of brain stem:

- a. Cerebellum
- b. Midbrain
- c. Pons
- d. None

22. Receptor potential:

- a. Is graded response
- b. Generates action potential in nerve fiber attached to receptor
- c. Can be propagated
- d. Only a and b are correct

23. Which tract is composed of 25 percent sensory fibers:

- a. Vestibulospinal
- b. Reticulospinal
- c. Corticospinal
- d. None

24. Area 3, 1, 2:

- a. Are primary sensory areas
- b. Responsible for localization of signals
- c. Are responsible for judging shapes and forms of objects
- d. All of the above

Pathology

25. The earliest change in nucleus in necrosis is:

- a. Karyolysis
- b. Pyknosis
- c. Clumping of chromatin
- d. Karyorrhexis

26. Peripheral orientation of leucocytes along vascular endothelium is called:

- a. Chemotaxis
- b. Margination
- c. Diapedesis
- d. Transmigration

27. The histological hallmark of chronic inflammation are all EXCEPT:

- a. Molecular infiltrate
- b. Fibroblast proliferation
- c. Granulation tissue
- d. Neutrophilic exudates

28. The first line of defence against viral infections and tumor cells are:

- a. B cells
- b. T cells
- c. Macrophages
- d. N. K. cells

29. Atropine is an example of:

- a. Systemic amphyphylaxis
- b. Local amphyphylaxis
- c. Antibody dependent cellular cytotoxicity
- d. Complement dependant cytotoxicity

30. Pathological hallmark of malignant transformation is:

- a. Anaplasia
- b. Metaplasia
- c. Local invasion
- d. Rapid growth rate

31. In AIDS there is deficiency of which cell?

- a. CD2
- b. CD3
- c. CD4
- d. CD8

32. A hyperchromatic large nucleus is a feature of:

- a. Langerhan's giant cell
- b. Foreign body giant cell
- c. Cancer giant cell
- d. All of the above

33. All are seen in septic meningitis EXCEPT:

- a. Cloudy CSF
- b. High TLC
- c. Low protein
- d. Low glucose

34. Which statement is false about non-haemorrhagic infarction?

- a. It is also known as pale infarct
- b. It is associated with thrombosis
- c. May be seen in spinal cord
- d. Can cause hydrocephalus

35. Saccular aneurysm is seen in association with all EXCEPT:

- a. Vascular type Ehlers Danlos Syndrome
- b. Autosomal dominant polycystic kidney
- c. Lung cancer
- d. NF type -I

36. The gene for Huntington disease is present on:

- a. 5 P16.3
- b. 4 P16.3
- c. 4 P13.3
- d. 5 P13.3

Pharmacology

37. Thiopentone is:

- a. Ultrashort acting agent
- b. Short acting drug
- c. Intermediate acting drug
- d. Long acting drug

38. Antipsychotic drugs use can be associated with the following adverse effect:

- a. Extrapyramidal side effects
- b. Muscle dystrophy
- c. Anaemia
- d. Hypoproteinemia

39. Prolonged use of steroids can lead to development of:

- a. Osler's nodes
- b. Bone tumors
- c. Hemangiomas
- d. Osteoporosis

40. The antiepileptic of choice in absence of seizures is:

- a. Phenytoin
- b. Phenobarbitone
- c. Valproic acid
- d. Carbamazepine

41. Use of atropine can cause:

- a. Dilation of pupils
- b. Constriction of pupils
- c. Damage to cornea
- d. Retinal damage

42. The following analgesic is available for topical use as gels and creams:

- a. Paracetamol
- b. Voveron
- c. Ibuprofen
- d. Aspirin

M.P.T. FIRST YEAR EXAMINATION, JUNE/JULY - 2013**APPLIED BASIC MEDICAL SCIENCES (CARDIO)****PAPER THREE****[Time allotted: Three hours]****[Max. Marks: 70]**

Note: Attempt all questions

Draw suitable diagrams wherever necessary.

A: Short answer questions**(7 x 7 = 49)****ANATOMY****Q. 1.** Write short note on Pericardium.**Q. 2.** Histological structure of elastic and muscular arteries.**PHYSIOLOGY****Q. 3.** Write about mechanism involved in regulation of blood pressure.**Q. 4.** Write in brief about mechanism of breathing.**PATHOLOGY****Q. 5.** Discuss the risk factors and morphological changes in blood vessels in various stages of development of atheroma.**Q. 6.** Discuss congenital heart disease.**PHARMACOLOGY****Q. 7.** Write briefly:

- Adverse drug effects of Diuretics.
- ACE- Inhibitors in congestive heart failure
- Role of nitrates in Angina .

(2.5+2.5+2=7)

M.P.T. FIRST YEAR EXAMINATION, JUNE/JULY - 2013**APPLIED BASIC MEDICAL SCIENCES (CARDIO)****PAPER THREE (MCQ)****Time allotted for MCQ- 15 minutes****B : MCQs (Single response type):****(½ x 42= 21)****Anatomy**

1. Left coronary artery arises from:
 - a. Anterior aortic sinus
 - b. Left posterior aortic sinus
 - c. Right posterior aortic sinus
 - d. None of the above
2. All are true about cardiac muscle EXCEPT:
 - a. Fibres show branching pattern
 - b. Presence of intercalated discs
 - c. Spindle shaped muscle fibres
 - d. Contains faint striations
3. The pulmonary veins:
 - a. Carry deoxygenated blood
 - b. Are two in number
 - c. Open in the left atrium
 - d. Open in the left ventricle
4. Apex of the heart is formed by:
 - a. Left and right ventricle
 - b. Left ventricle only
 - c. Right ventricle only
 - d. None of the above
5. Bundle of His is present in:
 - a. Interventricular septum
 - b. Interatrial septum
 - c. Right atrium
 - d. Walls of ventricles
6. Ductus arteriosus connects:
 - a. Pulmonary artery to pulmonary vein
 - b. Pulmonary artery to ascending aorta
 - c. Pulmonary artery to arch of aorta
 - d. Pulmonary vein to arch of aorta
7. Alveole of lungs are lined by:
 - a. Cuboidal epithelium
 - b. Columnar epithelium
 - c. Simple squamous epithelium
 - d. Stratified squamous epithelium
8. Mediastinal pleura is supplied by:
 - a. Intercostal nerves
 - b. Phrenic nerves
 - c. Autonomic nerves
 - d. Pulmonary plexus
9. Trachea:
 - a. Bifurcates at the level of T3 vertebra
 - b. Is lined by simple columnar epithelium
 - c. Is a continuation of the laryngopharynx
 - d. Contains C- shaped hyaline cartilages
10. Popliteal artery is an example of:
 - a. Elastic artery
 - b. Muscular artery
 - c. Minimal sized artery
 - d. None of the above
11. The following vein contains oxygenated blood :
 - a. Superior vena cava
 - b. Inferior vena cava
 - c. Portal vein
 - d. Umbilical vein

12. Crista terminalis is present in:
 - a. Right atrium
 - b. Left atrium
 - c. Right ventricle
 - d. Left ventricle

Physiology

13. The hall mark findings in the ECG of acute myocardial infarction is:
 - a. Depressing of the ST segment in the leads overlying the area of infarct.
 - b. Elevation of the ST segment in the leads overlying the area of infarct.
 - c. Appearance of Q wave in the leads in which normally it is absent
 - d. None of the above
14. Blood vessels which are highly elastic and distensible are:
 - a. Shunt vessels
 - b. Capacitance vessels
 - c. Resistance vessels
 - d. Windkessel vessels
15. Autoregulation phenomenon:
 - a. Refers to the capacity of tissues regulate their own blood flow despite fluctuations in perfusion pressure
 - b. Is seen in all vital organs of the body
 - c. Is brought about by the presence of basal myogenic tone in the blood vessels of body organs.
 - d. All of the above
16. Nitric oxide:
 - a. Also called endothelium derived relaxing factor (EDRF)
 - b. Deficiency is associated with hypotension
 - c. Produces smooth muscles relaxation throughout the body
 - d. Helps in formation of new blood vessels
17. The normal end diastolic volume is:
 - a. 80 – 100 ml
 - b. 100 – 120 ml
 - c. 120 – 140 ml
 - d. 140 – 160 ml
18. Isovolumetric ventricular contraction is characterized by:
 - a. Production of second heart sound
 - b. Contraction of ventricles but there is no emptying
 - c. Ventricles as a closed chamber and pressure within them remaining low
 - d. Fall in atrial pressure
19. 'a' wave of jugular venous pressure record is due to the:
 - a. Atrial systole
 - b. Bulging of tricuspid valve into the atria during isovolumetric ventricular contraction
 - c. Rise in atrial pressure before the tricuspid valve opens during diastole
 - d. Pulling down of A-V valves with onset of ventricular systole proper
20. Sino-aortic nerves are called as buffer nerves because:
 - a. They originate from vagus nerve
 - b. They innervate both baroreceptors and chemoreceptors
 - c. They buffer any alteration in both pH
 - d. They act as BP regulators

21. During inspiration:
- Muscles of the inspiration contract actively
 - Lungs follow thoracic expansion passively
 - Intrapulmonary pressure decreases
 - All of the above
22. Significance of FRC:
- Maintains residual volume constant
 - Allows continuous exchange of gases to occur throughout the respiration
 - Prevents sudden changes in partial pressure of gases in the blood
 - All of the above
23. In cigarette smoking, surfactant is:
- Increased
 - Decreased
 - Increased followed by decrease
 - Unaltered
24. Electrocardiogram refers to:
- Full form of the ECG
 - Record of electrical changes occurring in the heart
 - ECG machine
 - Method of recording the ECG

Pathology

25. In AIDS there is deficiency of which cell?
- CD2
 - CD3
 - CD4
 - CD5
26. Tumor with more than one germ cell layer is:
- Hamartoma
 - Sarcoma
 - Choristoma
 - Teratoma
27. Which of the following is used in the diagnosis of cancer?
- Histopathological examination
 - FNAC
 - Tumor markers
 - All of the above
28. Pathological hall mark of malignant transformation is:
- Anaplasia
 - Metastasis
 - Local invasion
 - Rapid growth rate
29. Reversible ischaemic changes include all EXCEPT:
- Cell shrinkage
 - Lysosomal swelling
 - Blocks at cell surfaces
 - Dissociation of polysomes to monosomes
30. Cytoplasm shows all the changes in necrosis EXCEPT:
- Increased eosinophilia
 - Glossy appearance
 - Calcification
 - Hydropic degeneration
31. Kidney, heart, adrenals show which type of necrosis?
- Coagulative
 - Caseous
 - Liquifactive
 - Enzymic
32. Inflammatory fluid rich in leukocytes and parenchymal debris is called:
- Exudates
 - Transudate
 - Pus
 - Oedema fluid
33. Which is not a risk factor for MI?
- OCP
 - Tobacco chewing
 - Smoking
 - Diabetes
34. Which enzyme rises earliest in MI?
- CK
 - SGOT
 - LDH₁
 - LDH₂
35. In RHD there is involvement of:
- Endocardium
 - Myocardium
 - Pericardium
 - All of the above
36. The most common congenital heart disease is:
- ASD
 - VSD
 - PDA
 - Fallot's tetralogy

Pharmacology

37. A drug is the drug of choice for the following arrhythmia:
- Ventricular tachycardia (VT)
 - Paroxysmal supraventricular tachycardia (PSVT)
 - Atrial fibrillation (AF)
 - Atrial flutter (AFL)
38. ACE-Inhibitors act by inhibiting:
- Renin
 - Carbonic anhydrase
 - Conversion of angiotensin I to angiotensin II
 - Conversion of inactive peptides to active peptides
39. Local anaesthetics act by inhibiting:
- Sodium channels
 - Potassium channels
 - Calcium channels
 - All of the above
40. All are NSAIDs EXCEPT:
- Aspirin
 - Morphine
 - Ibuprofen
 - Nimesulide
41. Diuretics can be used for one of the following conditions:
- Pulmonary edema
 - Corneal damage
 - Coagulation disorders
 - For controlling infection
42. One of the common indications for use of muscle relaxants is:
- To prevent osteoporosis
 - To stop bleeding
 - In painful spasm of muscle
 - Muscle degeneration

M.P.T. FIRST YEAR EXAMINATION, JUNE/JULY - 2013
MEDICAL & SURGICAL MANAGEMENT (NEURO)
PAPER FOUR

[Time allotted: Three hours]

[Max. Marks: 70]

Note: Attempt all questions

Draw suitable diagrams wherever necessary.

A: Short answer questions

(7 x 9 = 63)

- Q. 1.** Write risk factors of stroke, clinical features of left – MCA (Middle Cerebral Artery) infarct and management of cerebral infarct.
- Q. 2.** a. Electroencephalography (EEG)
b. Clinical features of transverse myelitis.
- Q. 3.** Define muscular dystrophy, write causes of myopathy, general clinical features and management of Duchenne muscular dystrophy.
- Q. 4.** a. Clinical features of Parkinson's disease.
b. Management of Parkinson's disease.
- Q. 5.** Differences between viral meningitis and encephalitis.
- Q. 6.** a. Optic neuritis.
b. Clinical features of Guillain Barre syndrome.
- Q. 7.** a. Clinical features of multiple sclerosis.
b. Neurological features of vitamin B₁₂ deficiency.
- Q. 8.** a. Simple partial seizures.
b. Spina bifida
- Q. 9.** Hydrocephalus.
- Q. 10.** Anterior horn cell are involved in
a. Motor neuron disease
b. Poliomyelitis
c. Amyotrophic lateral sclerosis
d. All of the above
- Q. 11.** Bell's phenomenon is seen in
a. Bell's palsy (3.5)
b. Lower motor neuron facial palsy
c. Upper motor neuron facial palsy (3.5)
d. Both a & b
- Q. 12.** Which is not a lower motor neuron lesion feature?
a. Muscular atrophy
b. Hypotonia
c. Absent reflexes
d. Upgoing plantar (3.5)
- Q. 13.** Which feature is not seen in a patient with peripheral neuropathy?
a. Distal sensory loss (3.5)
b. Distal weakness (3.5)
c. Muscular atrophy (3.5)
d. Spasticity
- Q. 14.** Which is not a common test for evaluation of neuropathy or myopathy?
a. Nerve conduction studies (3.5)
b. EMG
c. Blood investigations
d. MRI
- Q. 15.** Which of the following is not a feature of myasthenia gravis?
a. Diplopia
b. Dysarthria
c. Hyperreflexia
d. Ptosis
- Q. 16.** Amyotrophic lateral sclerosis (MND) has signs of
a. Upper motor neuron lesion
b. Lower motor neuron lesion
c. Both
d. None of the above

M.P.T. FIRST YEAR EXAMINATION, JUNE/JULY - 2013
MEDICAL & SURGICAL MANAGEMENT (NEURO)
PAPER FOUR (MCQ)

Time allotted for MCQ- 15 minutes

B : MCQs (Single response type):

(½ x 14 = 7)

Select the most appropriate answer and encircle the alphabet against it

1. Behavioural problems and disinhibition occur in which dementia?
 - a. Alzheimer's
 - b. Frontotemporal
 - c. Dementia with Lewy body
 - d. Corticobasal ganglionic degeneration.
2. What is the treatment of choice in Guillain Barre syndrome with prominent weakness in first 2 weeks?
 - a. IV immunoglobulin
 - b. Plasmapheresis
 - c. Methyl prednisolone
 - d. Any of a or b
3. Which of the following features do not occur in motor neuron disease?
 - a. Brisk reflexes
 - b. Muscle atrophy
 - c. Bowel & bladder involvement
 - d. Bulbar palsy
4. Cell count in CSF is not increased in:
 - a. Guillain Barre syndrome
 - b. ADEM (Acute disseminated encephalomyelitis)
 - c. Meningitis
 - d. Cerebral infarct
5. Glove and stocking pattern of sensory loss is seen in:
 - a. Myopathy
 - b. Polyneuropathy
 - c. Plexopathy
 - d. Radiculopathy
6. Sensations over the face are perceived via:
 - a. Facial nerve
 - b. Trigeminal nerve
 - c. Oculomotor nerve
 - d. All of the above
7. Amyotrophic lateral sclerosis (MND) has signs of:
 - a. Upper motor neuron lesion
 - b. Lower motor neuron lesion
 - c. Both
 - d. None of the above
8. Anterior horn cell are involved in:
 - a. Motor neuron disease
 - b. Poliomyelitis
 - c. Syringomyelia
 - d. All of the above
9. Bell's phenomenon is seen in:
 - a. Bell's palsy
 - b. Lower motor neuron facial palsy
 - c. Upper motor neuron facial palsy
 - d. Both a & b
10. Dissociative sensory loss is seen in:
 - a. Syringomyelia
 - b. Central cord syndrome
 - c. Intramedullary lesions
 - d. All of the above
11. Which is not a lower motor neuron lesion feature?
 - a. Muscular atrophy
 - b. Hypotonia
 - c. Absent reflexes
 - d. Upgoing plantar
12. Which feature is not present in a patient with peripheral neuropathy?
 - a. Distal sensory loss
 - b. Distal weakness
 - c. Muscular atrophy
 - d. Spasticity
13. Which is not a common test for evaluation of neuropathy or myopathy?
 - a. Nerve conduction studies
 - b. EMG
 - c. Blood investigations
 - d. MRI
14. Which of the following is not a feature of myasthenia gravis?
 - a. Diplopia
 - b. Dysarthria
 - c. Hypertonia
 - d. Ptosis

M.P.T. FIRST YEAR EXAMINATION, JUNE/JULY - 2013
MEDICAL & SURGICAL MANAGEMENT (ORTHO)
PAPER FOUR

[Time allotted: Three hours]

[Max. Marks: 70]

Note: Attempt all questions

Draw suitable diagrams wherever necessary.

A: Short answer questions

Write in brief:

- Q. 1. Different stages of TB hip and its management.
- Q. 2. CDH (Congenital dislocation of hip).
- Q. 3. Gouty arthritis.
- Q. 4. Clinical features and management of RA (Rheumatoid Arthritis) of the hands.
- Q. 5. AVN of head of femur.
- Q. 6. Ewing's tumour.
- Q. 7. Elbow dislocation.
- Q. 8. Radial nerve injury.
- Q. 9. Operative management in CP (Cerebral Palsy).

(7 x 9 = 63)

5. Local application of the following drug is used for eradication of pseudomonas infection:

- a. Acriflavin
- b. Eosol
- c. Acetic acid
- d. Tincture iodine

6. Osteomyelitis in cases of sickle cell anemia is caused by:

- a. Salmonella
- b. Pneumococcus
- c. Streptococcus
- d. Hemophilus

7. Ivory osteoma commonly arises in:

- a. Skull
- b. Ribs
- c. Pelvis
- d. Vertebrae

8. Commonest site of bone cyst is:

- a. Upper end of humerus
- b. Lower end of tibia
- c. Lower end of femur
- d. Upper end of femur

9. Which of the following arises from epiphysis?

- a. Osteosarcoma
- b. Ewing's sarcoma
- c. Osteochondroma

10. Osteogenic sarcoma can develop in:

- a. Osteochondroma
- b. Paget's disease
- c. Osteoid osteoma
- d. All of the above

11. Following is involved in rheumatoid arthritis:

- a. Synovial fluid
- b. Synovial membrane
- c. Cartilage
- d. Subchondral bone

12. Deafness in cases of Paget's disease is due to:

- a. Thickened cranium
- b. Brain compression
- c. Narrowing of foramina of skull
- d. Osteosclerosis

13. Shoveller's fracture is:

- a. Stress fracture of spinous processes
- b. Fracture of forearm bones
- c. Fracture of body of ribs
- d. Fracture dislocation of axis vertebrae

14. Shepherd Crook deformity is seen in:

- a. Achondroplasia
- b. Gaucher's disease
- c. Hyperthyroidism
- d. Fibrous dysplasia

M.P.T. FIRST YEAR EXAMINATION, JUNE/JULY - 2013
MEDICAL & SURGICAL MANAGEMENT (ORTHO)
PAPER FOUR (MCQ)

Time allotted for MCQ- 15 minutes

B : MCQs (Single response type):

(½ x 14 = 7)

Select the most appropriate answer and encircle the alphabet against it

1. Most common cause of scoliosis in children is:
 - a. Unequal limb length
 - b. Post poliomyelitis
 - c. Hemivertebra
 - d. Marfan's syndrome
2. Best diagnostic procedure for anterior cruciate ligament injury is:
 - a. Lachman's test
 - b. Pivot shift test
 - c. Ant. Drawer test
 - d. McMurray's test
3. The most common cause of a sprain ankle is injury of:
 - a. Deltoid ligament
 - b. Lateral ligament
 - c. Inf. Tibiofibular ligament
 - d. Ant. Tibiofibular ligament
4. Traction injury to epiphysis of the vertebra is known as:
 - a. Osgood Schlatter
 - b. Sindinglarsen
 - c. Scheurmann
 - d. Severe's
5. Local application of the following drug is used for eradication of pseudomonas infection:
 - a. Acriflavin
 - b. Eusol
 - c. Acetic acid
 - d. Tincture iodine
6. Osteomyelitis in cases of sickle cell anemia is caused by:
 - a. Salmonella
 - b. Pneumococcus
 - c. Streptococcus
 - d. Hemophilus
7. Ivory osteoma commonly arises in:
 - a. Skull
 - b. Ribs
 - c. Pelvis
 - d. Vertebrae
8. Commonest site of bone cyst is:
 - a. Upper end of humerus
 - b. Lower end of tibia
 - c. Lower end of femur
 - d. Upper end of femur
9. Which of the following arises from epiphysis?
 - a. Osteosarcoma
 - b. Ewing's sarcoma
 - c. Osteoclastoma
 - d. Myeloma
10. Osteogenic sarcoma can develop in:
 - a. Osteoblastoma
 - b. Paget's disease
 - c. Osteoid osteoma
 - d. All of the above
11. Following is involved in rheumatoid arthritis:
 - a. Synovial fluid
 - b. Synovial membrane
 - c. Cartilage
 - d. Subchondral bone
12. Deafness in cases of Paget's disease is due to:
 - a. Thickened cranium
 - b. Brain compression
 - c. Narrowing of foramina of skull
 - d. Osteosclerosis
13. Shoveller's fracture is:
 - a. Stress fracture of spinous processes
 - b. Fracture of forearm bones
 - c. Fracture of body of atlas
 - d. Fracture dislocation of axis vertebrae
14. Shepherd Crook deformity is seen in:
 - a. Achondroplasia
 - b. Gaucher's disease
 - c. Hyperthyroidism
 - d. Fibrous dysplasia

M.P.T. FIRST YEAR EXAMINATION, JUNE/JULY - 2013
MEDICAL & SURGICAL MANAGEMENT (CARDIO)
PAPER FOUR

[Time allotted: Three hours]

[Max. Marks: 70]

Note: Attempt all questions

Draw suitable diagrams wherever necessary.

A: Short answer questions

(7 x 9 = 63)

Short notes/ Write in brief about:

- Q. 1. Draw and label coronary arteries and their branches.
- Q. 2. CABG
- Q. 3. Describe and draw various thoracic incisions.
- Q. 4. Draw and label pulmonary segments and lobes of both lungs.
- Q. 5. Management of heart failure.
- Q. 6. Classification and management of hypertension.
- Q. 7. Diagnostic criteria of rheumatic fever.
- Q. 8. Management of acute myocardial infarction.
- Q. 9. Classification and management of valvular heart disease.

M.P.T. FIRST YEAR EXAMINATION, JUNE/JULY - 2013
MEDICAL & SURGICAL MANAGEMENT (CARDIO)
PAPER FOUR (MCQ)

Time allotted for MCQ- 15 minutes

B : MCQs (Single response type):

(½ x 14 = 7)

Select the most appropriate answer and encircle the alphabet against it

1. Coronary sinus opens into:
 - a. Left atrium
 - b. Left ventricle
 - c. Right atrium
 - d. Right ventricle
2. All are cyanotic congenital heart diseases EXCEPT:
 - a. Tetralogy of Fallot
 - b. Double outlet right ventricle
 - c. Atrial septal defect
 - d. Trans position of great arteries
3. All are coronary arteries EXCEPT:
 - a. Obtuse marginal
 - b. Diagonal
 - c. Superior vena cava
 - d. Posterior descending artery
4. Which of these devices provide fixed O₂ concentration to the patient?
 - a. Nasal cannula
 - b. Venture mask
 - c. Face mask
 - d. CPAP mask
5. Which of these is a bronchodilator?
 - a. Salbutamol
 - b. Salmeterol
 - c. Atropine
 - d. Budesonide
6. Left atrial thrombosis can occur in:
 - a. Aortic stenosis
 - b. Mitral stenosis
 - c. Mitral regurgitation
 - d. Tricuspid regurgitation
7. Which of these is a fixed cardiac output lesion?
 - a. Aortic regurgitation
 - b. Aortic stenosis
 - c. Tricuspid regurgitation
 - d. ASD
8. For single operator in CPR compression ventilation is:
 - a. 15:1
 - b. 30:1
 - c. 30:2
 - d. 15:2
9. Effective chest compression during CPR is:
 - a. 1 inch
 - b. 2 inches
 - c. 3 inches
 - d. 4 inches
10. Which of these views is not used for monitoring CVP?
 - a. Internal jugular vein
 - b. Subclavian vein
 - c. Cephalic vein
 - d. Femoral vein
11. Which of these is not involved in venous drainage of heart?
 - a. SVC
 - b. IVC
 - c. Coronary sinus
 - d. Portal vein
12. Rib crowding seen in:
 - a. COPD
 - b. Underlying lung fibrosis
 - c. Emphysema
 - d. Pigeon chest
13. Which of these will not cause plethoric lung fields in x-ray chest?
 - a. VSD
 - b. PDA
 - c. TOF
 - d. ASD
14. Which of these is not a type of ASD?
 - a. Ostium primum
 - b. Perimembranous
 - c. Ostium secundum
 - d. Sinus venosus

M.P.T. FIRST YEAR EXAMINATION, JUNE/JULY- 2013**BIostatistics & Research Methodology****PAPER FIVE****[Time allotted: Three hours]****[Max. Marks: 70]****Note:** Attempt all questions

Draw suitable diagrams wherever necessary.

A: Short answer questions**(7 x 9 = 63)**

- Q. 1.** Write a short notes on:
 a) Null hypothesis and Alternative Hypothesis (3)
 b) Single Blind and Double Blind Study (4)
- Q. 2.** a) Explain Chi –Square test. Write the Properties of Chi –Square test. (3)
 b) Is there any association between Smoking habits in patients who were treated for throat Cancer? (4)
 Details of treatment of Patients are given below:

	Presence of throat cancer	Absence of throat cancer
Smoker	8	12
Non-Smoker	20	10

- Q. 3.** Explain Normal distribution curve with suitable example. Write the five Properties of Normal distribution. Draw Normal curve and show rejection area in that figure. (7)
- Q. 4.** What is the difference between Independent t – test and Paired t- test? Explain your answer with suitable Example. Write four assumption of t- test. (7)
- Q. 5.** What is the use of Sampling in Research? Explain different type of Probability and Non Probability sampling method. What is the difference between stratified random sampling and Cluster sampling? (7)
- Q. 6.** Explain the concept of probability. Write five laws of probability. (7)
- Q. 7.** Explain Correlation and Regression with suitable example. Is the word Association and Relationship are same? (7)
- Q. 8.** Explain Case control study and Cohort study with suitable example. (7)
- Q. 9.** Consider the following study in which left hand and right hand systolic blood pressures were compared. This study was performed on 10 subjects. Their blood pressures were measured in both hands. Is there any difference between the mean systolic blood pressure of left hand and right hand? (7)

Number of Patient	1	2	3	4	5	6	7	8	9	10
Systolic BP (left hand)	120	130	140	125	135	140	145	140	125	120
Systolic BP (right hand)	125	135	145	140	140	120	150	140	145	120

M.P.T. FIRST YEAR EXAMINATION, JUNE/JULY - 2013
BIostatISTICS & RESEARCH METHODOLOGY
PAPER FIVE (MCQ)

Time allotted for MCQ- 15 minutes

B : MCQs (Single response type):

(0.5 x 14= 7)

Select the most appropriate answer and encircle the alphabet against it

1. If the correlation between variable A and B is calculated to be -0.93, the scatterplot of A versus B would likely show
 - a. Strong positive Correlation
 - b. Strong Negative Correlation
 - c. Perfect Positive Correlation
 - d. Perfect Negative Correlation
 2. In normal distribution curve
 - a. Mean = Median = Mode
 - b. Mean = Median $\neq$ Mode
 - c. Mean $\neq$ Median $\neq$ Mode
 - d. None of these
 3. Which one of the following variables can be measured in ratio scale?
 - a. Weight.
 - b. Gender of a person
 - c. Temperature.
 - d. None of these
 4. The Variance is:
 - a. The square of the standard deviation
 - b. A measure of variability
 - c. An approximate indicator of how numbers vary from the mean
 - d. All of the above
 5. Limit of the Probability is equal to :
 - a. 0 to 1
 - b. -1 to 1
 - c. $-\infty$ to ∞
 - d. None of these
 6. The value of Pearson's Correlation Coefficient is:
 - a. 0 to 1
 - b. -1 to 1
 - c. $-\infty$ to ∞
 - d. -3 to +3
 7. In Null Hypothesis we assume that:
 - a. There is no statistically significant difference between two groups
 - b. There is statistically significant difference between two groups
 - c. Either a or b
 - d. None of these.
 8. Reliability of data means:
 - a. Validity of data
 - b. Consistency of data
 - c. Raw data is known as Reliable data
 - d. None of these
 9. A statistical test used to compare the mean of more than 2 groups is:
 - a. One-way analysis of variance
 - b. Z- test
 - c. t-test for correlation coefficients
 - d. Simple regression
 10. Which one of the following variables is not categorical?
 - a. Age of a person.
 - b. Gender of a person: male or female.
 - c. Choice on a test item: true or false.
 - d. Blood group
- Question No. 11 to 14 based on following statement**
 A randomized experiment was done by randomly assigning each participant either to walk for half an hour three times a week or to sit quietly reading a book for half an hour three times a week. At the end of a year the change in participants' blood pressure over the year was measured, and the change was compared for the two groups. (Number of participant in each group = 30)
11. This is a randomized experiment rather than an observational study because
 - a. Blood pressure was measured at the beginning and end of the study.
 - b. The two groups were compared at the end of the study.
 - c. The participants were randomly assigned to either walk or read, rather than choosing their own activity.
 - d. A random sample of participants was used.
 12. The two treatments in this study were
 - a. Walking for half an hour three times a week and reading a book for half an hour three times a week.
 - b. Having blood pressure measured at the beginning of the study and having blood pressure measured at the end of the study.
 - c. Walking or reading a book for half an hour three times a week and having blood pressure measured.
 - d. Walking or reading a book for half an hour three times a week and doing nothing.
 13. Which Statistical test suitable to calculate the change in Blood pressure in two groups?
 - a. t- test
 - b. Chi square test
 - c. ANOVA
 - d. Z test
 14. F - Value Calculated for:
 - a. t- test
 - b. ANOVA
 - c. Chi square test
 - d. All of these

Regn. No.

Paper Code: MPT (O/N/C)-101

M.P.T. FIRST YEAR EXAMINATION, JUNE/JULY - 2015
APPLIED PHYSIOTHERAPY
PAPER FIRST

[Time allotted: Three hours]

[Max. Marks: 70]

Note: Attempt all questions

Draw suitable diagrams wherever necessary.

A: Short answer questions

(7 x 9 = 63)

Q. 1. Write goniometric measurement for the following:

- a. Medial rotation of hip joint
- b. Calcaneal eversion

Q. 2. Describe MMT for the following muscles:

- a. Infraspinatus
- b. Gluteus medius

Q. 3. Explain neurophysiologic principles and techniques of PNF.

Q. 4. Differentiate between mobilization and manipulation. Explain the grades of Maitland mobilization along with its indications and contraindications.

Q. 5. Short notes:

- a. Limb length measurement
- b. Properties of water used in hydrotherapy

Q. 6. Explain the application and parameters of IFT for a patient having right L5 radiculopathy along with research evidence.

Q. 7. What is painless delivery? Explain the application of TENS during the stages of labour pain.

Q. 8. Explain uses of micro current in sports injuries.

Q. 9. Short notes:

- a. Fluid therapy
- b. Production and dosage of SWD

Regn. No.

Paper Code: MPT (O/N/C)-101

M.P.T. FIRST YEAR EXAMINATION, JUNE/JULY - 2015

APPLIED PHYSIOTHERAPY

PAPER FIRST (MCQ)

Time allotted for MCQ- 15 minutes

B : MCQs (Single response type):

(½ x 14= 7)

Select the most appropriate answer and encircle the alphabet against it

1. Aerobic metabolism mainly occurs in which type of muscle fibers
 - a. Type 1
 - b. Type 2a
 - c. Type 2b
 - d. None of these
2. Toe standing with slightly bent knee represents power for which muscle
 - a. Calf
 - b. Soleus
 - c. Gastrocnemius
 - d. Tibialis posterior
3. To measure shoulder abduction using goniometer, the fulcrum is kept at:
 - a. Greater tubercle
 - b. Lesser tubercle
 - c. Acromion process
 - d. Lateral end of clavicle
4. Among these, which is not an indication of traction;
 - a. PIVD
 - b. Muscle spasm
 - c. Osteoporosis
 - d. Radiculopathy
5. In flat back posture; tightness commonly occurs in which muscle?
 - a. Iliopsoas
 - b. Hamstring
 - c. Rectus femoris
 - d. Erector spinae
6. Goniometer is used for;
 - a. Diagnosis
 - b. Motivating the subjects
 - c. Both of them
 - d. None of them
7. In lateral view, at the level of feet, plumb line falls at;
 - a. Subtalar joint
 - b. Calcaneonavicular joint
 - c. Calcaneocuboid joint
 - d. Talocrural joint
8. Accommodation is seen in:
 - a. Nerves
 - b. Muscles
 - c. Skin
 - d. Bone
9. The unit of ultrasound is:
 - a. Watts
 - b. Watts/ cm²
 - c. Volts/inch²
 - d. Newton
10. The temperature of fluidotherapy unit should be
 - a. Above 45 deg Celsius
 - b. Between 38- 45 deg Celsius
 - c. Below 38 deg Celsius
 - d. None of the above
11. In the electromagnetic spectrum infra red occupy a place between:
 - a. 400nm- 750nm
 - b. 10nm- 400nm
 - c. 200nm-350nm
 - d. 750nm- 400000nm
12. The depth of penetration of luminous infra-red is:
 - a. 15mm
 - b. 3 cm
 - c. 2 mm
 - d. 5-10 mm
13. The effective depth of penetration of MWD is:
 - a. 3 cm
 - b. 4.3 cm
 - c. 5 cm
 - d. 1 cm
14. Commonly used therapeutic frequency of SWD is:
 - a. 29.17 MHz
 - b. 30.12 MHz
 - c. 27.12 MHz
 - d. 20.19 MHz

Regn. No.

Paper Code: MPT(O/N/C)-102

M.P.T. FIRST YEAR EXAMINATION, JUNE/JULY - 2015

APPLIED BIOMECHANICS & ERGONOMICS

PAPER TWO

[Time allotted: Three hours]

[Max. Marks: 70]

Note: Attempt all questions

Draw suitable diagrams wherever necessary.

A: Short answer questions

(7 x 9 = 63)

- Q. 1. Explain in brief sEMG and sEMG-PS.
- Q. 2. Describe the physical factors affecting the mechanical properties of tendons and ligaments.
- Q. 3. Write short note on biomechanics of running gait.
- Q. 4. Explain in detail 3 and 4 stage of MSD.
- Q. 5. Explain in detail the physical properties of the spinal ligaments (based on stress strain curve).
- Q. 6. Biochemical and biomechanical factors that constitute a hypothetical explanation of the clinical phenomenon of disc disease.
- Q. 7. Spinal muscles and their functional biomechanics.
- Q. 8. Elaborate the biomechanical behavior of bone under various loading modes.
- Q. 9. Explain the biomechanics involved in the work of breathing. (Only for Cardio)

OR

Explain the biomechanics of median nerve mobilization. (Only for Neuro)

OR

Explain biomechanically the role of Cruciate ligaments for knee stability. (Only for Ortho)

Regn. No.

Paper Code: MPT(O/N/C)-102

M.P.T. FIRST YEAR EXAMINATION, JUNE/JULY - 2015

APPLIED BIOMECHANICS & ERGONOMICS

PAPER TWO (MCQ)

Time allotted for MCQ- 15 minutes

B : MCQs (Single response type):

(½ x 14= 7)

Select the most appropriate answer and encircle the alphabet against it

1. MSD symptom does not contain
 - a. Numbness
 - b. Stiffness
 - c. Tingling
 - d. Cramping
2. The slope of the stress-strain diagram in the elastic region represents the:
 - a. Relative stiffness of material.
 - b. Toughness
 - c. Resilience of the material.
 - d. Ductile property of the material.
3. Hysteresis is :
 - a. Is gain of energy when a structure is subjected to repetitive load and unload cycles
 - b. Is loss of energy when a structure is subjected to repetitive load and unload cycles.
 - c. A viscoelastic property of disc.
 - d. Both (a) & (c).
4. Spinal Flexion is a two part movement :
 - a. First 60 degrees Flexion of lumbar movements, 25 degrees of hip Flexion.
 - b. First 25 degree of lumbar Flexion, 60 degrees of hip Flexion.
 - c. First 40 degrees of lumbar Flexion, 45 degrees of hip Flexion.
 - d. First 45 degrees of hip Flexion, 40 degrees lumbar Flexion.
5. Type I collagen fibres reflects the need of annulus fibrous to resist:
 - a. Tensile forces.
 - b. Compression forces.
 - c. Torsional forces.
 - d. Shear forces.
6. Compressive loading leads to :
 - a. Disc prolapsed.
 - b. Vertebral fractures.
 - c. End plate fractures
 - d. Ligament tears.
7. Which of the following are anthropometric measures?
 - a. Height
 - b. Weight
 - c. ROM
 - d. All of the above.
8. Work activities should be performed joint in
 - a. End range
 - b. Mid range
 - c. initial range
 - d. Joint neutral
9. how many tips are there for ergonomic work station
 - a. 12
 - b. 14
 - c. 11
 - d. 10
10. The psychosocial factor most consistent with WRMSD is:
 - a. Social support
 - b. Job satisfaction and job control.
 - c. Social support, workload, and job control
 - d. Monotony at work.
11. Ergonomics can be best defined as
 - a. Human factors
 - b. Study of work performance with emphasis on work safety and productivity.
 - c. Both a & b
 - d. Study of work performance with emphasis on human traits, abilities, human limitations.
12. Which is the preferred lift of those who are experiencing chronic or acute low back pain?
 - a. Stoop
 - b. Squat
 - c. Semi-squat
 - d. Kinetic
13. Which of the following would be most suitable to assess the musculoskeletal risk factors associated with manual handling?
 - a. OWAS
 - b. RULA
 - c. REBA
 - d. ManTRA
14. In a subject with a completely defective right quadriceps muscle responsible for frequent falls what kind of compensatory strategy can be used to avoid collapse
 - a. Never extending the knee joint
 - b. Backward trunk bending before initial contact
 - c. Pushing with the hand on the knee back
 - d. Flexion of the knee before initial contact

6
Regn. No.

Paper Code: MPTC-103

M.P.T. FIRST YEAR EXAMINATION, JUNE/JULY - 2015
APPLIED BASIC MEDICAL SCIENCES (CARDIO)
PAPER THREE

[Time allotted: Three hours]

[Max. Marks: 70]

Note: Attempt all questions

Draw suitable diagrams wherever necessary.



A: Short answer questions

(7 x 7 = 49)

ANATOMY

- Q. 1. Explain in detail diagrammatic presentation of coronary arterial, venous & collator circulation of the heart.
- Q. 2. Write a detailed note on bronchopulmonary segments and their clinical significance with the help of suitable diagrams.

PHYSIOLOGY

- Q. 3. Draw diagrams illustrating the pressure changes in alveoli & pleural space during inspiration and expiration. Describe the mechanics of respiration eliciting the role of surfactant.
- Q. 4. Define Mean arterial pressure and its significance. Explain the short & long term blood pressure control mechanisms.

PATHOLOGY

- Q. 5. Write short notes on Metaplasia.
- Q. 6. Write short notes on Myocardial Infarction.

PHARMACOLOGY

- Q. 7. Write short notes on:

a. Uses & adverse effects of

(4 Marks)

i. Aspirin

ii. ACE inhibitors

b. Cardio-selective Beta Blockers

(3 Marks)

Regn. No.

Paper Code: MPTN-103

M.P.T. FIRST YEAR EXAMINATION, JUNE/JULY - 2015
APPLIED BASIC MEDICAL SCIENCES (NEURO)
PAPER THREE

[Time allotted: Three hours]

[Max. Marks: 70]

Note: Attempt all questions

Draw suitable diagrams wherever necessary.

A: Short answer questions

(7 x 7 = 49)

ANATOMY

Q. 1. Discuss the parts and functions of cerebellum. Enumerate the various signs of in-coordination.

Q. 2. Draw a labelled diagram of corticospinal tract. Discuss the role of pyramidal system in motor control.

PHYSIOLOGY

Q. 3. What is synapse? Describe its structure. Enumerate the properties.

(2+3+2)

Q. 4. Write short notes on :

- a. Cross section of spinal cord showing various sensory pathways with a labelled diagram.
- b. Sensations carried by various sensory tracts.

PATHOLOGY

Q. 5. Write short notes on:

- a. Phagocytosis
- b. Necrosis

Q. 6. Write short notes on:

- a. Lab finding in various type of meningitis in a tabular form.
- b. Alzheimer's disease

PHARMACOLOGY

Q. 7. Write short notes on:

- a. Mechanism of action and Adverse effects of Morphine. (3 marks)
- b. Mechanism of action, therapeutic uses and adverse effects of corticosteroids. (4 marks)

Regn. No.

Paper Code: MPTC-103

M.P.T. FIRST YEAR EXAMINATION, JUNE/JULY - 2015
APPLIED BASIC MEDICAL SCIENCES (CARDIO)
PAPER THREE (MCQ)

Time allotted for MCQ- 20 minutes

B : MCQs (Single response type):

(½ x 42= 21)

Anatomy

1. Which amongst following is the highest order pacemaker?
 - a. AV node
 - b. Bundle of his
 - c. SA node
 - d. Purkinje fibers
2. First heart sound is produced by which of the following event?
 - a. Opening of AV valves
 - b. Closure of AV valves
 - c. Opening of semilunar valves
 - d. Closure of semilunar valves
3. Which amongst the following is the choice of arterial graft in CABG?
 - a. Brachial artery
 - b. Internal thoracic artery
 - c. Left coronary artery
 - d. None of the above
4. The apex of the heart:
 - a. Is formed only by left ventricle
 - b. Is situated at 4th intercostals space
 - c. Is just medial to midclavicular line
 - d. Is directed downwards and to the medial
5. Pleural fluid is formed by _____ layer and absorbed by _____ layer.
 - a. Visceral, parietal
 - b. Parietal, visceral
 - c. Inner, outer
 - d. None of the above
6. Bronchopulmonary segments doesn't have its own:
 - a. Artery
 - b. Lymphatic circulation
 - c. Vein
 - d. Bronchiole
7. Inhaled foreign particles/objects are likely to be trapped in:
 - a. Trachea
 - b. Carina
 - c. Right main bronchus
 - d. Left main bronchus
8. The cells of the myocardium behave as a single coordinated unit called a _____.
 - a. Functional syncytium
 - b. Contractile unit
 - c. Coordinated pump
 - d. None of the above
9. At the time of birth, the foramen ovale is closed by:
 - a. Presence of blood
 - b. Presence of oxygen
 - c. Equalization of atrial pressure
 - d. none of the above
10. Diaphragm has three large orifices to pass following structures except:
 - a. Oesophagus
 - b. Inferior vena cava
 - c. Aorta
 - d. Superior vena cava

11. "Pump handle" movement is most evident in:
 - a. Upper ribs
 - b. Lower ribs
 - c. Floating ribs
 - d. All of the above
12. Which amongst following isn't a layer of artery?
 - a. Tunica adventia
 - b. Tunica media
 - c. Tunica intima
 - d. Tunica vasorum

Physiology

13. Cardiac Muscles shows
 - a. All & None Phenomena
 - b. Tetanic contraction
 - c. Spike potentials
 - d. Syncytium
14. Muscles of inspiration are all except
 - a. Diaphragm
 - b. Internal intercostal
 - c. Sternocleidomastoid
 - d. Ext intercostal
15. QRS complex of ECG is due to
 - a. Atrial depolarization
 - b. Ventricular depolarization
 - c. Ventricular depolarization & Atrial repolarization
 - d. repolarization
16. Ventricular repolarization Change of heart rate with inspiration & expiration is called as
 - a. Fibrillation
 - b. Flutter
 - c. Tachy Arrhythmia
 - d. Sinus arrhythmia
17. Normal Intra-pleural pressure at base of lung at start of inspiration
 - a. 760mmHg
 - b. 765mmHg
 - c. 755mmHg
 - d. 757.5 mmHg
18. Total surface area is Maximum of
 - a. Arterioles
 - b. Venules
 - c. Capillaries
 - d. Aorta
19. Cardiac output is defined as volume of blood:
 - a. Ejected by both ventricle per min
 - b. Ejected by both ventricle per stroke
 - c. Ejected by each ventricle per stroke
 - d. Ejected by each ventricle per min
20. All are Dynamic Lung function tests except:
 - a. PEFR
 - b. FEV1
 - c. FRC
 - d. MVC

P.T.O...

21. Third heart sound is due to
 a. Closure of tricuspid valve
 b. Opening of bicuspid valve
 c. Rapid filling of ventricle
 d. atrial contraction
22. Conducting system of human heart comprises of all except:
 a. Sinus venosus
 b. SA Node
 c. Purkinje fibres
 d. Bundle of his
23. Central Chemo-receptors are most responsive to:
 a. Hypoxia
 b. PCO_2
 c. Decrease pH
 d. All
24. Homometric regulation of Cardiac output includes all except:
 a. Catecholamine
 b. Sympathetic system
 c. Frank Starling Law
 d. Increase ECF Ca^{++}

Pathology

25. Which of the following does not occur in Necrosis?
 a. Cell rupture
 b. Chromatin condensation
 c. Breakdown of organelles
 d. Coagulation of cytoplasm proteins
26. Reversible ischemic changes include all Except:
 a. Cell swelling
 b. Lysosomal swelling
 c. Blebs on cell surface
 d. Karyorrhexis
27. Earliest change in nucleus during necrosis:
 a. Karyolysis
 b. Pyknosis
 c. Chromatin clumping
 d. karyorrhexis
28. Brain tissue shows which type of necrosis?
 a. Coagulative
 b. Fibrinoid
 c. Caseous
 d. Liquefactive
29. The enzyme that plays key role in Apoptosis is:
 a. Ribonuclease
 b. Endonuclease
 c. Caspase
 d. DNAase
30. Estrogen can cause uterine muscles to undergo:
 a. Hyperplasia
 b. Hypertrophy
 c. Metaplasia
 d. Both Hypertrophy and Hyperplasia
31. Blood flow to myocardium occurs maximum during:
 a. Diastole
 b. Early systole
 c. Late systole
 d. Equally in both
32. Which valve is affected by papillary muscle dysfunction:
 a. Aortic
 b. Pulmonary
 c. Mitral
 d. All of the above

33. Left atrial dilatation occurs in isolation in:

- a. Mitral stenosis
 b. Ischemic heart disease
 c. Hypertension
 d. Calcific aortic stenosis
34. Which area of heart is supplied by circumflex branch of coronary artery:
 a. Lateral aspect of LV
 b. Apex
 c. Posterior LV wall
 d. Left $1/3^{rd}$ of anterior surface of LV
35. In Myocardial infarction, the type of necrosis seen in:
 a. Caseous
 b. Gangrenous
 c. Liquefactive
 d. Coagulative
36. The enzyme which remains high for longest period in acute MI is:
 a. CK
 b. Troponin
 c. SGPT
 d. LDH

Pharmacology

37. Lignocaine acts by blocking which type of channels
 a. Sodium
 b. Potassium
 c. Calcium
 d. Chloride
38. Example of a potassium channel opener used in angina
 a. Glyceryl trinitrate
 b. Captopril
 c. Verapamil
 d. Nicorandil
39. Hoffmann elimination is seen with
 a. Nitrous oxide
 b. Atracurium
 c. Thiopentone
 d. Succinylcholine
40. Digoxin acts by inhibiting
 a. $Na^+ K^+$ ATPase
 b. $H^+ K^+$ ATPase
 c. Adenyl cyclase
 d. Monoamine oxidase
41. Corticosteroids can cause worsening of symptoms of all the following diseases EXCEPT
 a. Hypertension
 b. Asthma
 c. Peptic ulcer
 d. Diabetes
42. Diuretic preferred in symptomatic cases of Congestive Heart Failure is
 a. Hydrochlorothiazide
 b. Furosemide
 c. Mannitol
 d. Amiloride

M.P.T. FIRST YEAR EXAMINATION, JUNE/JULY - 2015
APPLIED BASIC MEDICAL SCIENCES (NEURO)
PAPER THREE (MCQ)

Time allotted for MCQ- 40 minutes

B : MCQs (Single response type):

(½ x 42= 21)

Anatomy

1. What Sensory Pathway Carry Light Touch And Proprioception:
 - a. Medial Lemniscus
 - b. Lateral Lemniscus
 - c. Spinothalamic
 - d. Chorda Tympani
2. In Receptive Dysphasia The Lesion Will Be Most Likely In:
 - a. Cerebellum
 - b. Striate Cortex
 - c. Wernicke's Area
 - d. Substantia Gelatinosa
3. What Innervates The Intrafusal Fibres Of Muscle Spindle:
 - a. Alpha Motor Neuron
 - b. Gamma Motor Neuron
 - c. Ia Neuron
 - d. Ib Neuron
4. What Brodmann Area Is Primary Visual Cortex:
 - a. Area 2
 - b. Area 4
 - c. Area 17
 - d. Area 41
5. What Lesion Causes Muscle Wasting With Loss Of Reflexes:
 - a. UMN
 - b. LMN
 - c. Cerebellar
 - d. Total Cord Transaction At C2
6. In Which Condition Both LMN And UMN Are Affected:
 - a. ALS
 - b. Parkinsons
 - c. DMD
 - d. Poliomyelitis
7. Which Of The Following Structure Is Not A Part Of Basal Ganglia:
 - a. Caudate Nucleus
 - b. Red Nucleus
 - c. Putamen
 - d. Substantia Nigra
8. The Loss Of Nigral Dopamine Neurons Is Associated With:
 - a. Parkinson's Disease
 - b. Huntington's Disease
 - c. Mitochondrial Disease
 - d. Motor Neuron Disease
9. Damage To The Primary Visual Area Can Produce:
 - a. Optic Ataxia
 - b. Blind Sight
 - c. Hemineglect
 - d. Apraxia
10. Which Of The Following Structure Is Not Found In CNS:
 - a. Spinal Cord
 - b. Thalamus
 - c. Pons
 - d. Dorsal Root Ganglia

11. The Autonomic System Includes Which Of The Following:

- a. Vagus Nerve
- b. Hypoglossal Nerve
- c. Meissner's Corpuscles
- d. Olfactory Nerve

12. Which Of The Following Nerve Originates From Pons:

- a. Oculomotor Nerve
- b. Trochlear Nerve
- c. Abducens Nerve
- d. Optic Nerve

Physiology

13. RMP in a motor nerve fibre is

- a. -90MV
- b. -70MV
- c. 70MV
- d. 90MV

14. The following are glial cells except :

- a. Pyramidal Cell
- b. Microglia
- c. Oligodendroglia
- d. Astrocytes

15. The neurons are classified based on the number of processes are following except

- a. Unipolar
- b. Apolar
- c. Bipolar
- d. Polar

16. Dis appearance of Nissl's Granules during nerve injury is called :

- a. Chromatolysis
- b. Autolysis
- c. Hemolysis
- d. Proteolysis

17. Gap functions are present in..... synapse.

- a. Chemical
- b. Electrical
- c. Axoaxonic
- d. Axosomatic

18. Ionic basis of EPSP is :

- a. Entry of Na^+ 10ns
- b. Exit of Na^+ 10ns
- c. Entry of Cl^- 10ns
- d. Exit of Cl^- 10ns

19. Somatosensory cortex corresponds to broadman area number :

- a. 3,1,2
- b. 4,6
- c. 8
- d. 17

20. Slow pain is carried by _____ fibres:

- a. $A\alpha$
- b. C
- c. C
- d. $A\delta$

21. Dorsal column tract carry the following sensations except :

- a. Pain
- b. Pressure
- c. Fire touch
- d. Vibrations

22. The sensation which has no relay in Thalamus:

- a. Olfaction
- b. Temperature
- c. Pain
- d. Fire touch

23. Functional division of the cerebellum are following except :

- a. Archicerebellum
- b. Spino cerebellum
- c. Vestibulocerebellum
- d. Cerebrocerebellum

24. CSF is formed in :

- a. Lateral Ventricles
- b. Sagittal sinus
- c. Fourth Ventricles
- d. Central Canal

Pathology

25. In Alzheimer's disease cerebral plaques consist of

- a. ATTR Protein
- b. $A\beta_2$ M Protein
- c. $A\beta$ Protein
- d. Prion Protein

26. Cells of acute inflammation are :

- a. Neutrophil
- b. Lymphocyte
- c. Macro phages
- d. Plasma cell

27. Granuloma formation is:

- a. Type-I hypersensitivity
- b. Type-II hypersensitivity
- c. Type-III hypersensitivity
- d. Type-IV hypersensitivity

28. In tuberculosis the following type of necrosis is seen:

- a. Coagulative
- b. Liquefactive
- c. Caseous necrosis
- d. Fat necrosis

29. All are chemical mediators if inflammation except :

- a. NO
- b. Vasoactive amines
- c. Histamines
- d. Hemosiderin

30. HIV can be transmitted through all except:

- a. Sexual transmission
- b. Through blood & blood products
- c. By shaking hands with infected person
- d. From infected mother to new born child

31. The most numerous cell in central nervous system are :

- a. Astrocytes
- b. Neurons
- c. Oligodendrocytes
- d. Microglia

32. Most common route of spread of infection to the brain is:

- a. Via venous routes
- b. Via arterial routes
- c. Via lymphatics
- d. Along nerves

33. Glucose content of CSF is not changed in following conditions:

- a. Acute pyogenic meningitis
- b. Acute viral meningitis
- c. Cryptococcal meningitis
- d. Tuberculous meningitis

34. Subarachnoid haemorrhage acute most often from the following :

- a. Hypertension
- b. Aneurysm
- c. Vascular malformation
- d. Bleeding disorder

35. The cell of origin of meningioma is :

- a. Dura mater
- b. Arachnoid cap cell layer
- c. Pia mater
- d. Choroid plexus

36. The most common cause of dementia is :

- a. Parkinsonism
- b. Alzheimer's disease
- c. Multiple sclerosis
- d. Previous encephalomyelitis

Pharmacology

37. Lignocaine blocks which type of channels

- a. Chloride
- b. Sodium
- c. Potassium
- d. Calcium

38. Which of the following is a Diazepam antagonist?

- a. Flumazenil
- b. Naloxone
- c. Pentazocine
- d. Carbidopa

39. Second gas effect is seen with?

- a. Thiopentone
- b. Sevoflurane
- c. Ketamine
- d. Nitrous oxide

40. Following drugs are given in bronchial asthma except

- a. Salbutamol
- b. Ipratropium bromide
- c. Propranolol
- d. Corticosteroids

41. Which of the following is a MAO inhibitor?

- a. Bromocriptine
- b. Fluoxetine
- c. Imipramine
- d. Selegiline

42. Anti-inflammatory dose of aspirin is

- a. 0.3-0.6 g/day
- b. 100-300mg/day
- c. 3-6gm/day
- d. 10-30mg/day

Regn. No.

Paper Code: MPTC-104

M.P.T. FIRST YEAR EXAMINATION, JUNE/JULY - 2015
MEDICAL & SURGICAL MANAGEMENT (CARDIO)
PAPER FOUR

[Time allotted: Three hours]

[Max. Marks: 70]

Note: Attempt all questions

Draw suitable diagrams wherever necessary.

A: Short answer questions

(7 x 8 = 56)

- Q. 1. Acute and chronic complication of MI.
- Q. 2. Classify shock and management of Cardiogenic shock.
- Q. 3. Management of atrial fibrillation.
- Q. 4. Etiology, clinical features, diagnosis and management of acute rheumatic fever.
- Q. 5. Define Bronchiectasis and write about pathogenesis of bronchiectasis. Write down the steps for the postural drainage from Right middle lobe of the lung.
- Q. 6. Define COPD (Chronic Obstructive Pulmonary Disease) and state staging of COPD. Write briefly about the breathing exercises you will teach a patient of COPD.
- Q. 7. Define ARDS. Enumerate its causes. Discuss the ventilator strategies in the management of ARDS.
- Q. 8. Enumerate chest wall deformities. Discuss briefly long term management of a case of kyphoscoliosis.

M.P.T. FIRST YEAR EXAMINATION, JUNE/JULY - 2015
MEDICAL & SURGICAL MANAGEMENT (NEURO)
PAPER FOUR (MCQ)

Time allotted for MCQ- 15 minutes

B : MCQs (Single response type):

(½ x 28= 14)

Select the most appropriate answer and encircle the alphabet against it

1. Following test is essential in patient of ataxia:
 - a. MMSE
 - b. NCV/EMG
 - c. Romberg's test
 - d. Gover's Test
2. Most common type of motor Neuron disease is :
 - a. Amyotrophic lateral sclerosis
 - b. Pseudo Bulbar palsy
 - c. PMA
 - d. SMA
3. One of the most common features of MND is:
 - a. Hypotonia
 - b. Pseudo Hypertrophy of muscle
 - c. Fasciculation
 - d. Planter Extensor
4. Acute Meningitis is associated with :
 - a. High CSF cell counts with polymorphs
 - b. High CSF cell counts with lymphocytes
 - c. High CSF cell counts with eosinophils
 - d. Normal CSF cell counts
5. Bacterial meningitis can be differentiated from viral meningitis by:
 - a. CSF pressure
 - b. CSF protein
 - c. CSF sugar
 - d. None
6. Most common endemic encephalitis is?
 - a. Herpes simplex encephalitis
 - b. Japanese encephalitis
 - c. Acute disseminated encephalitis
 - d. Subacute sclerosing pan-encephalitis
7. Most common complication of tubercular meningitis :
 - a. Paraplegia
 - b. Hemiplegia
 - c. Optic neuritis
 - d. Hydrocephalus
8. Most common cause of pyogenic meningitis in adults:
 - a. Pneumococcal
 - b. Meningococcal
 - c. Gonococcal
 - d. Staphylococcal
9. It is true for spasticity except?
 - a. Caused by pyramidal lesion
 - b. Present throughout the limb movements
 - c. Associated with hyperactive reflexes
 - d. Can be associated with clonus
10. Dopamine in brain is released by:
 - a. Corpus striatum
 - b. Globus Pallidus
 - c. Thalamus
 - d. Substantia Nigra
11. Cerebral Diplegia is a form of :
 - a. Motor nerve disease
 - b. Cerebro vascular accident
 - c. Cerebral palsy
 - d. Brain attack
12. Type of memory loss in early dementia is :
 - a. Immediate memory
 - b. Recent Memory
 - c. Remote Memory
 - d. All of the above
13. EDSS scale is used to see severity of:
 - a. Stroke
 - b. Dementia
 - c. Parkinson's Disease
 - d. Multiple sclerosis
14. Which of the following test of speech is normal in Broca's Aphasia:
 - a. Repetition
 - b. Fluency
 - c. Comprehension
 - d. Naming

P.T.O...

15. All of the following are the tertiary prevention Except :
- Early institution of physiotherapy is polio affected individuals
 - Artificial limb placement in a limb amputated individual
 - Pulse polio vaccination programme
 - Hydrotherapy is spinal cord injury patients
16. All of the following are types of spinal neural disjunction except:
- Distematomyelia
 - Myelomeningocele
 - Cerebral palsy
 - Diplomyelia
17. The nerve supplying the anatomical snuff box is :
- Radial nerve
 - Ulna nerve
 - Median nerve
 - Musculocutaneous nerve
18. Median nerve entrapment at the wrist involves:
- Lateral 3½ fingers
 - Medial 1½ fingers
 - Dorsal surface of the hand
 - Entire hand
19. The risk factors associated with stroke is all except:
- Hypertension
 - Homocysteinemia
 - Smoking
 - female gender
20. Motor aphasia generally involves?
- Broca's area of left hemispheric
 - Broca's area of right hemispheric
 - Temporal lobe
 - Cerebral cortex
21. All of the following are branches of internal carotid artery except :
- Anterior cerebral artery
 - Middle cerebral artery
 - Anterior communicating artery
 - Posterior cerebral artery
22. Pinpoint pupil is hallmark of:
- Pontine infect
 - Thalamic infarct
 - Left frontal hemorrhage
 - Cerebellar hemorrhage
23. Non traumatic subarachnoid hemorrhage is most commonly due to?
- Aneurysm rupture
 - AVM rupture
 - Deep vein thrombosis
 - Venous angioma
24. Wrist drop is due to :
- Radial nerve injury
 - Medial nerve injury
 - Musculocutaneous nerve injury
 - Ulnar nerve injury
25. The investigation of choice in head injured patient is :
- MRI Brain
 - CT Head
 - EEG
 - X-Ray Skill
26. Investigation of choice in epilepsy patient is:
- MRI Brain
 - NCCT Head
 - EEG
 - All of the above
27. The hallmark of meningitis is all of the below except:
- Neck stiffness
 - Fever
 - Cranial neuropathies
 - Normal conscious level
28. Lumbar puncture is contraindicated in :
- Intracranial space occupying lesion
 - Meningitis
 - Subarachnoid hemorrhage
 - Tuberculus affliction of the nervous system

Regn. No.

Paper Code: MPT(O/N/C)-105

M.P.T. FIRST YEAR EXAMINATION, JUNE/JULY- 2015
BIOSTATISTICS & RESEARCH METHODOLOGY
PAPER FIVE

[Time allotted: Three hours]

[Max. Marks: 70]

Note: Attempt all questions

Draw suitable diagrams wherever necessary.

A: Short answer questions

(7 x 9 = 63)

Q. 1. Explain Qualitative and Quantitative Variables with suitable example.

Q. 2. Write short notes on:

- a. Measurement of Central Tendency
- b. Measurement of Dispersion.

Q. 3. Describe in brief a Normal Distribution Curve with suitable diagram showing rejection area.

Q. 4. Write short notes on:

- a. Sampling Method
- b. Correlation

Q. 5. Explain Chi square test with suitable example.

Q. 6. Find the rank correlation- coefficient of the Marks of 8 candidates in Statistics & Research as given below:

Research	76	90	98	69	54	82	67	52
Statistics	25	37	56	12	7	36	23	11

Q. 7. Following table gives the values of serum cholesterol levels for samples aged between 25-34 in a community. Calculate Median Cholesterol level of samples.

Cholesterol Level	80-119	120-159	160-199	200-239	240-279	280-319	320-399
Number	13	150	442	299	115	34	14

Q. 8. Explain different types of study design used in Research.

Q. 9. Consider a study conducted in HIMS Dehradun to check the change of peak expiratory flow rate (PEFR) before and after a walk on a cold winter's day for a random sample of 15 asthmatics. Which statistical test should be used to check the null hypothesis that there is no difference of mean PEFR before and after the walk? Write four assumptions under which statistical test works. If data is not normally distributed then which statistical test is useful to test the same null hypothesis?

Regn. No.....

Paper Code: MPT(O/N/C)-105

M.P.T. FIRST YEAR EXAMINATION, JUNE/JULY - 2015
BIostatISTICS & RESEARCH METHODOLOGY
PAPER FIVE (MCQ)

Time allotted for MCQ- 15 minutes

(0.5 x 14= 7)

B : MCQs (Single response type):

Select the most appropriate answer and encircle the alphabet against it

1. Find the mode in the following data set
{11, 12, 13, 14, 14}
a. 11
b. 12.8
c. 13
d. 14
2. Which of the following is not a measure of central tendency?
a. Mean
b. Mode
c. Range
d. Median
3. Which of the following symbols represents a population parameter?
a. SD
b. S
c. R
d. σ
4. In biostatistics, group of individuals taken for study is called as
a. Block
b. Population
c. Group
d. Flock
5. If the correlation between variable A and B is calculated to be 0, Then it indicate
a. Positive Correlation
b. No Correlation
c. No linear Correlation
d. Partial correlation
6. If data is negatively skewed then
a. Mean = Median = Mode
b. Mean > Median > Mode
c. Mean < Median < Mode
d. None of these
7. Limit of Correlation coefficient is
a. +1 to -1
b. 0 to 1
c. 1 to ∞
d. $-\infty$ to ∞
8. Limit of Regression Coefficient is
a. +1 to -1
b. 0 to 1
c. 1 to ∞
d. $-\infty$ to ∞
9. Shape of Pie Chart is :
a. Rectangular
b. Cubical
c. Circular
d. Spherical
10. Snowball sampling is an example of
a. Probabilistic sampling
b. Non – probabilistic Sampling
c. Cluster sampling
d. None of these.
11. In cross- sectional studies data is collected
a. Single Point of Time
b. From a cohort
c. Follow up
d. Retrospectively
12. Visual analog scale (Minimum value = 0 indicate no pain and maximum value 10 = Severe pain) is
a. Nominal
b. Ordinal scale
c. Ratio
d. Interval
13. Blood group is an example of
a. Nominal
b. Ordinal scale
c. Ratio
d. Interval
14. A study was conducted to find the association between smoking and lung cancer so that 7000 samples were assessed from a community, it is an example of
a. Descriptive
b. Case control
c. Cross sectional
d. Case series

Regn. No.

Paper Code: MPT (O/N/C)-101

M.P.T. FIRST YEAR EXAMINATION, JUNE/JULY - 2016

APPLIED PHYSIOTHERAPY

PAPER FIRST

[Time allotted: Three hours]

[Max. Marks: 70]

Note: Attempt all questions

Draw suitable diagrams wherever necessary.

A: Short answer questions

(7 x 9 = 63)

- Q. 1.** Explain forward head posture with reference to line of gravity and it's muscular imbalances.
- Q. 2.** Explain different grading systems of manual muscle testing.
- Q. 3.** What are the types of stretching? Also explain the efficacy of static stretching for increasing ankle dorsiflexion.
- Q. 4.** Explain the properties of water with relevance to hydrotherapy. How these properties can be used to assist weak quadriceps?
- Q. 5.** Explain the pain gate theory given by Melzack and Wall.
- Q. 6.** Using appropriate research evidence, explain the effectiveness of interferential current therapy in the management of musculoskeletal pain.
- Q. 7.** What is reverse piezoelectric effect? Explain the efficacy of therapeutic ultrasound for tendinopathies.
- Q. 8.** Using supportive literature, evaluate the effects of short wave diathermy in patients with chronic low back pain.
- Q. 9.** Explain the efficacy of electromyographic feedback for neuromuscular reeducation in hemiplegic stroke.

M.P.T. FIRST YEAR EXAMINATION, JUNE/JULY - 2016**APPLIED PHYSIOTHERAPY****PAPER FIRST (MCQ)****Time allotted for MCQ- 15 minutes****B : MCQs (Single response type):****(½ x 14= 7)**

Select the most appropriate answer and encircle the alphabet against it

1. Which is the characteristic of dominant side?
 - a. Depressed shoulder
 - b. Raised pelvis
 - c. Both of these
 - d. None of these
2. In flat back posture; tightness occurs in which muscle?
 - a. Iliopsoas
 - b. Hamstring
 - c. Rectus femoris
 - d. Erector spinae
3. While applying traction, more force will be generated at upper lumbar region, when hip at:
 - a. Supine + Neutral hip
 - b. Supine + 45 degree hip flexion
 - c. Supine + 90 degree hip flexion
 - d. Prone
4. What is the best position to perform MMT of anterior deltoid muscle for grade 3:
 - a. Supine
 - b. Prone
 - c. Standing
 - d. High sitting
5. During iontophoresis, lidocaine is indicated for:
 - a. Pain
 - b. Hyperhidrosis
 - c. Inflammation
 - d. Infection
6. Which of these lamina act as substantia gelatinosa?
 - a. Lamina I
 - b. Lamina II
 - c. Lamina III
 - d. Lamina IV
7. Which among them reduces pain mainly through inhibition of C fibers?
 - a. High frequency TENS
 - b. Low frequency TENS
 - c. Intense TENS
 - d. Burst TENS
8. Ratio of paraffin: wax used for therapeutic purpose:
 - a. 1:7
 - b. 7:1
 - c. 1:3
 - d. 3:1
9. After nerve injury, which therapeutic current is preferred for first 14 days?
 - a. Continuous galvanic
 - b. Intermittent galvanic
 - c. Continuous faradic
 - d. Intermittent faradic
10. In case of denervated muscle, the motor point shifts:
 - a. Upwards
 - b. Downwards
 - c. Medial
 - d. Lateral
11. Which of these is not a contraindication of hydrocollator packs?
 - a. Chronic inflammation
 - b. Infection
 - c. Skin diseases
 - d. Dysesthesia
12. Ice is an indication for:
 - a. Acute inflammation
 - b. Chronic inflammation
 - c. Raynaud's disease
 - d. Peripheral vascular disease
13. At the neuromuscular junction the chemical released is:
 - a. Calcium
 - b. Prostaglandins
 - c. Acetylcholine
 - d. Adrenaline
14. Attraction of tissue repair via electrode polarity is called:
 - a. Pneumotaxic effect
 - b. Galvanotaxic effect
 - c. Stereotactic effect
 - d. Mechanical effect

Regn. No.

Paper Code: MPT(O/N/C)-102

M.P.T. FIRST YEAR EXAMINATION, JUNE/JULY - 2016
APPLIED BIOMECHANICS & ERGONOMICS
PAPER TWO

[Time allotted: Three hours]

[Max. Marks: 70]

Note: Attempt all questions

Draw suitable diagrams wherever necessary.

A: Short answer questions

(7 x 9 = 63)

- Q. 1. Discuss Cruciate ligaments of the knee and their biomechanics.
- Q. 2. Discuss Biomechanics of tendons and ligaments.
- Q. 3. Briefly explain the biomechanics of shoulder joint and factors leading to impingement syndrome.
- Q. 4. Write about Gait adaptations in an individual with anterior cruciate ligament deficiency.
- Q. 5. Explain the various material properties by a stress-strain diagram.
- Q. 6. Briefly explain Ergonomics and work assessment.
- Q. 7. Briefly explain in terms of anthropometry use in:
a. Reach.
b. Clearance.
c. Posture.
- Q. 8. Explain in detail the five biomechanical principles of Spinal orthosis.
- Q. 9. (O) Briefly explain various factors for Low Back Pain.
(N) Define Neuro biomechanics. What is Neuraxis? Describe the neuro-biomechanical changes that takes place during radial nerve mobilization.
(C) Explain the biomechanics involved in the work of breathing.

Regn. No.

Paper Code: MPT(O/N/C)-102

M.P.T. FIRST YEAR EXAMINATION, JUNE/JULY - 2016

APPLIED BIOMECHANICS & ERGONOMICS

PAPER TWO (MCQ)

Time allotted for MCQ- 15 minutes

(½ x 14= 7)

B : MCQs (Single response type):

Select the most appropriate answer and encircle the alphabet against it

1. Angle of acetabulum in erect position is -
 - a. 50 degrees
 - b. 70 degrees
 - c. 70 degrees
 - d. 120 degrees
2. Angle of ante version is -
 - a. 135 degrees
 - b. 35 degrees
 - c. 25 degrees
 - d. 225 degrees
3. Shoulder has following number of bursae -
 - a. 3
 - b. 1
 - c. 2
 - d. 5
4. The upward rotators of scapula are -
 - a. Trapezius and serratus anterior
 - b. Trapezius and levator scapulae
 - c. Trapezius and pectorals
 - d. Levator scapulae and pectorals
5. Toughness is a measure of the capacity of a material to sustain permanent deformation
And is measured by :
 - a. Total area under its stress-strain diagram.
 - b. Area under stress-strain curve in the elastic region.
 - c. Slope of the stress-strain curve.
 - d. None of the above.
6. Macroergonomics is:
 - a. Fitting a task to the individuals who do the task.
 - b. Designing physical items so they fit the person using them and can be used by other employees also.
 - c. Fitting the organization to the people in the organization.
 - d. Harmonizing the operation of an organization by designing or redesigning any and all parts of the organization.
7. Which of the following would be most suitable to assess the musculoskeletal risk factors associated with manual handling?
 - a. OWAS
 - b. RULA
 - c. REBA
 - d. Mantra
8. What are the five characteristics of the task that are considered when using ManTRA?
 - a. Cycle time, force, speed, awkwardness, and vibration
 - b. Trunk posture, upper limb posture, lower limb posture, force, and duration
 - c. Intensity of exertion, duration of exertion, exertions per minute, speed of work, and duration of task per day
 - d. Head and neck posture, arm and wrist posture, lower limb support, muscle use, and force and load.
9. What are the six characteristics of the task that are considered when using the Strain Index?
 - a. Cycle time, force, speed, awkwardness, duration per day, and vibration
 - b. Head and neck posture, trunk posture, upper limb posture, lower limb posture, force, and duration
 - c. Intensity of exertion, duration of exertion, exertions per minute, hand and wrist posture, speed of work, and duration of task per day
 - d. Head and neck posture, trunk posture, arm and wrist posture, lower limb support, muscle use, and force and load
10. The horizontal distance from the acromion to the tip of the third digit, with the elbow and wrist extended and the shoulder flexed to 90 degrees, is the:
 - a. Shoulder grip length.
 - b. Fingertip height.
 - c. Popliteal height.
 - d. Upper limb length.
11. Posture is-
 - a. The relative orientation of parts of the body in space.
 - b. Relative position of the patient in space.
 - c. Sitting, Standing.
 - d. None of the above.
12. With regard to workspace design, the material currently being manipulated by the worker should be no more than how many inches from the edge of the work table?
 - a. 3 inches
 - b. 10 inches
 - c. 17 inches
 - d. 27 inches
13. In a second-class lever:
 - a. The force is between the axis and the working force.
 - b. The effort force is farther from the axis than the resistance.
 - c. The axis is between the effort and the resistance.
 - d. The forces are equal and opposite.
14. The psychosocial factor most consistent with WRMSD is:
 - a. Social support.
 - b. Job satisfaction and job control.
 - c. Social support, workload, and job control.
 - d. All of the above.

Regn. No.

Paper Code: MPTO-103

M.P.T. FIRST YEAR EXAMINATION, JUNE/JULY -2016
APPLIED BASIC MEDICAL SCIENCES (ORTHO)
PAPER THREE

[Time allotted: Three hours]

[Max. Marks: 70]

Note: Attempt all questions

Draw suitable diagrams wherever necessary.

A: Short answer questions

(7 x 7 = 49)

ANATOMY

Q. 1. Discuss in detail the muscles of pectoral region.

Q. 2. Write short notes on :

- a. Deep peroneal nerve palsy
- b. Femoral triangle

PHYSIOLOGY

Q. 3. Describe excitation contraction coupling in skeletal muscles and draw a graph to show length-tension relationship.

Q. 4. Classify nerve fibres and write about the effects of injury on them.

PATHOLOGY

Q. 5. Discuss etiopathogenesis of acute osteomyelitis.

Q. 6. Write short note on :

- a. Necrosis.
- b. Myasthenia Gravis

PHARMACOLOGY

Q. 7. Write short notes on:

- a. Centrally acting muscle relaxants
- b. Lignocaine

Regn. No.

Paper Code: MPTO-103

M.P.T. FIRST YEAR EXAMINATION, JUNE/JULY -2016
APPLIED BASIC MEDICAL SCIENCES (ORTHO)
PAPER THREE (MCQ)

Time allotted for MCQ- 30 minutes

($\frac{1}{2} \times 42 = 21$)

B : MCQs (Single response type):

ANATOMY

1. The weight bearing bone of the leg is the
 - a. Tibia
 - b. Patella
 - c. Fibula
 - d. None
2. Flexor pollicis longus hold by:
 - a. Ulnar bursa
 - b. Radial bursa
 - c. Carpal bursa
 - d. Volar bursa
3. Active ip extension by:
 - a. Extensor digitorum communis
 - b. Extensor digiti minimi
 - c. Intrinsic muscles
 - d. Extensor indicis
4. Thenar muscles are except :
 - a. Abductor pollicis longus
 - b. Abductor digiti minimi
 - c. Flexor pollicis longus
 - d. Opponens pollicis
5. Carpal arch is supported by a ligament known as:
 - a. Carpal ligament
 - b. Transverse ligament
 - c. Flexor retinaculum
 - d. None
6. Interossei are the muscle arise from:
 - a. PIP
 - b. DIP
 - c. Base of PIP
 - d. MCP
7. Normal angle of torsion of femur is:
 - a. 125 degree
 - b. 90 degree
 - c. 60 degree
 - d. 100 degree
8. Latissimus dorsi attach between :
 - a. Scapula and ribs
 - b. Scapula and pelvis
 - c. Scapula and clavicle
 - d. Pelvic girdle
9. Inferior angle of scapula lies at the level of _____ rib:
 - a. First
 - b. Fifth
 - c. Seventh
 - d. Tenth
10. PIN is the branch of:
 - a. Radial nerve
 - b. Ulnar nerve
 - c. Median nerve
 - d. None
11. AIN is the branch of :
 - a. Radial nerve
 - b. Median nerve
 - c. Ulnar nerve
 - d. None

12. Root value of axillary nerve

- a. C₅ - C₆
- b. C₆ - C₇
- c. Both
- d. None

PHYSIOLOGY

13. Myelin is composed of:
 - a. A double layer of lipid molecules with proteins embedded in it
 - b. Two lipid layers sandwiched between three protein layers
 - c. Many layers of unit membranes
 - d. A single layer of cell membrane
14. Which of the following nerve fibers is affected by local anaesthetics first?
 - a. Parasympathetic
 - b. A
 - c. B
 - d. C
15. A sprinter utilises in the first 3 to 4 minutes of a race:
 - a. Creatine phosphate
 - b. Muscle glycogen
 - c. Blood glucose
 - d. Free fatty acids
16. Compound action potential is the property of:
 - a. Single nerve fiber
 - b. Sensory nerves
 - c. Motor nerves
 - d. Mixed nerves
17. Wallerian degeneration refers to:
 - a. Degenerative and regenerative changes in a cut nerve fiber
 - b. Degeneration of the axon upto the cell body.
 - c. Degenerative changes in distal part of cut nerve fiber
 - d. Degenerative changes at the site of injury
18. The end plate potential is characterized by:
 - a. Propagation
 - b. All or none law
 - c. Depolarization
 - d. Hyperpolarization
19. The contractile unit of a muscle is called:
 - a. Sarcolemma
 - b. Sarcomere
 - c. Sarcoplasm
 - d. Sarcoplasmic reticulum
20. Muscles concerned with fine graded, precise movements are characterized by:
 - a. 3-6 muscle fibers per motor unit
 - b. High glycogen and ATPase activity
 - c. Easy fatigability
 - d. All of the above
21. During isometric contraction:
 - a. Length of every sarcomere remains constant
 - b. Tension developed during twitch is greater than during titanic contraction
 - c. Tension developed is independent of initial length of the muscle
 - d. Length of whole muscle remains constant

22. Non-myelinated nerve fibers differ from myelinated fibers in that they:
- Have higher conduction velocity
 - Are more excitable
 - Lacks nodes of Ranvier
 - Are not capable of regeneration
23. Muscle fatigue is due to:
- Long latency
 - Low ATPase activity
 - Slow contraction of a muscle
 - Inadequate supply of ATP
24. Slow muscle fibers have:
- Decreased endoplasmic reticulum
 - Decreased calcium stores
 - Decreased glycogen
 - Increased mitochondria

PATHOLOGY

25. Cells of chronic inflammation are all except:
- Lymphocytes
 - Macrophages
 - Neutrophils
 - Plasma cells
26. Which type of giant cells are seen in tuberculosis:
- Tuonon giant cells
 - Langhan's giant cells
 - Foreign body giant cells
 - Tumor giant cell
27. All are examples of type one hypersensitivity except:
- Anaphylaxis
 - Allergy
 - Arthus reaction
 - Atopy
28. Pathological hallmark of malignant change is:
- Anaplasia
 - Metastasis
 - Local invasion
 - Rapid growth rate
29. In AIDS, there is deficiency of which cell:
- CD2
 - CD3
 - CD4
 - CD8
30. Kidney, heart and adrenal show the following type of necrosis:
- Coagulation
 - Caseous
 - Liquifactive
 - Enzyme
31. Tophus is the pathognomic lesion of:
- Multiple myeloma
 - Cystinosis
 - Gout
 - Eale's disease
32. After reperfusion there is increased uptake of:
- Ca
 - Na
 - K
 - Cl

33. Unmineralised bone is called:

- Woven bone
- Callus
- Lamellar bone
- Osteoid

34. The most common site of skeletal involvement in TB is:

- Knee
- Hips
- Spine
- Humerus

35. Osteoblasts produce:

- Collagen
- Calcium
- Pyrophosphate
- Monosodium urate

36. Osteoporosis is caused by all except:

- Corhico steroid
- Oestradiol
- Methohexate
- Chronic heparin therapy

PHARMACOLOGY

37. Which of the following is selective COX-2 inhibitor?

- Ketorolac
- Indomethacin
- Etoricoxib
- Diclofenac

38. All are DMARDs EXCEPT:

- Methotrexate
- Leflunomide
- Prednisolone
- Cyclosporine

39. All are relative contraindications of corticosteroid therapy EXCEPT:

- Hypertension
- Osteoporosis
- Diabetes Mellitus
- Osteoarthritis

40. Nearly complete drug elimination occurs in:

- 1-2 t 1/2
- 2-3 t 1/2
- 3-4 t 1/2
- 4-5 t 1/2

41. Aspirin is used in all of the following conditions EXCEPT:

- Acute rheumatic fever
- Post myocardial infarction
- Juvenile rheumatoid arthritis
- Osteoarthritis

42. Directly acting muscle relaxant is:

- Dantrolene
- Diazepam
- Baclofen
- Vecuronium

Regn. No.

Paper Code: MPTN-103

M.P.T. FIRST YEAR EXAMINATION, JUNE/JULY - 2016
APPLIED BASIC MEDICAL SCIENCES (NEURO)
PAPER THREE



[Time allotted: Three hours]

[Max. Marks: 70]

Note: Attempt all questions
Draw suitable diagrams wherever necessary.

A: Short answer questions

(7 x 7 = 49)

ANATOMY

- Q. 1. Draw a labelled diagram of circle of Willis. What areas of brain are supplied by ACA, MCA and PCA?
- Q. 2. Discuss parts and functions of cerebellum in detail.

PHYSIOLOGY

- Q. 3. Draw a well-labelled diagram of cross section of the spinal cord showing locations and functions of major ascending tracts.
- Q. 4. Write briefly on:
- Functions of thalamus
 - Properties of nerve fiber

 PATHOLOGY

- Q. 5. Discuss various types of meningitis .
- Q. 6. Discuss Alzheimer 's disease.

PHARMACOLOGY

- Q. 7. Write short notes on:
- Mechanism of action, therapeutic uses and adverse effects of phenytoin.
 - Morphine

M.P.T. FIRST YEAR EXAMINATION, JUNE/JULY - 2016
APPLIED BASIC MEDICAL SCIENCES (NEURO)
PAPER THREE (MCQ)

Time allotted for MCQ-30 minutes

(½ x 42= 21)

B : MCQs (Single response type):**Anatomy**

- Which of the following cranial nerves is not directly related to the eye?
 - II
 - III
 - VI
 - VII
- Which of the following cranial nerves can cause movement of trapezius muscle?
 - IV
 - VII
 - X
 - XI
- Which of the following cranial nerves causes sensation to anterior 2/3 of the tongue?
 - IV
 - VII
 - X
 - XI
- Which of the following cranial nerves can be directly linked to respiratory and cardiac dysfunction?
 - IV
 - VII
 - X
 - XI
- Which of the following cranial nerves can be directly linked to ptosis?
 - III
 - IV
 - V
 - VI
- Which of the following cranial nerves can be directly linked to diplopia?
 - III
 - IV
 - V
 - VI
- Which of the following is another name for cranial nerve IX?
 - Trochlear
 - Vestibulocochlear
 - Hypoglossal
 - Glossopharyngeal
- Athetosis type movements are often identified with a _____ lesion.
 - Midbrain
 - Basal ganglia
 - Subthalamic
 - Thalamus
- Changes in personality and judgment are often associated with a _____ lesion.
 - Frontal lobe
 - Parietal lobe
 - Broca's area
 - Wernicke's area

- Changes in motor aphasia are often associated with a _____ lesion.
 - Frontal lobe
 - Parietal lobe
 - Broca's area
 - Wernicke's area
- Changes in sensory aphasia are often associated with a _____ lesion.
 - Frontal lobe
 - Parietal lobe
 - Broca's area
 - Wernicke's area
- Which of the following diseases has not been directly linked with Bell's palsy?
 - AIDS
 - Diabetes
 - Lyme disease
 - Alzheimer's disease

Physiology

- The fibers that join different parts of the two cerebral hemisphere are known as:
 - Specific thalamocortical fibers
 - Association fibers
 - Commisural fibers
 - Projection fibers
- Circadian rhythm is controlled by:
 - Raphe nuclei
 - Suprachiasmatic nuclei
 - Reticular nucleus
 - Thalamus
- Thalamus is a relay centre for ALL of the following sensations EXCEPT:
 - Temperature
 - Pain
 - Smell
 - Proprioception
- The function of cerebellum is:
 - To maintain tone, posture and equilibrium
 - Control voluntary activity
 - Relay different sensations
 - Regulate body temperature
- Anterior descending pathways are concerned with control of:
 - Distal group of muscles of limb
 - Muscles of trunk and proximal limbs
 - Both distal and proximal groups of muscles of limbs
 - Muscles of trunk only
- Head ganglion of autonomic nervous system is:
 - Thalamus
 - Hypothalamus
 - Superior cervical ganglion
 - Stellate ganglion

✓
19. Most common site of lesion to the pyramidal tracts:

- a. Internal capsule
- b. Midbrain
- c. Pons
- d. Medulla

20. Superficial pain:

- a. Involves skin and subcutaneous tissue
- b. Is dull and poorly localized
- c. Associated with faintness, vomiting and fall in BP
- d. Is both local and radiates to distant site

21. Structural and functional unit of the muscle is:

- a. Sarcotubular system
- b. Sarcolemma
- c. Sarcomere
- d. Sarcoplasmic reticulum

22. Disappearance of Nissl granules during nerve injury is termed:

- a. Autolysis
- b. Chromatolysis
- c. Hemolysis
- d. Proteolysis

23. Stretch reflex is an example of:

- a. Polysynaptic reflex
- b. Disynaptic reflex
- c. Monosynaptic reflex
- d. Asynaptic reflex

24. The following is a rapidly adapting receptor:

- a. Touch
- b. Pain
- c. Temperature
- d. Pressure

✓ Pathology

25. Inflammatory fluid rich in leukocytes and parenchymal debris is called:

- a. Exudate
- b. Transudate
- c. Oedema fluid
- d. Plasma

26. The first step of inflammation is:

- a. Transient vasoconstriction
- b. Leukocyte margination
- c. Phagocytosis
- d. Increased vascular permeability

27. Which of the following giant cells are seen in tuberculosis?

- a. Touton
- b. Langhan's giant cells
- c. Foreign body giant cells
- d. Tumor giant cells

28. The epithelioid cell in a granuloma is a:

- a. Modified epithelial cell
- b. Activated macrophages
- c. Small lymphocytes
- d. None of the above

29. Atopy is an example of:

- a. Systemic anaphylaxis
- b. Local anaphylaxis
- c. Antibody dependent cellular cytotoxicity
- d. Complement dependent cytotoxicity

30. In AIDS, there is deficiency of:

- a. CD2 cells
- b. CD3 Cells
- c. CD4 Cells
- d. CD5 Cells

31. The most numerous cells in CNS are:

- a. Astrocytes
- b. Neurons
- c. Oligodendrocytes
- d. Microglia

32. All the following cause meningoencephalitis except:

- a. Herpes simplex virus type I
- b. Herpes simplex virus type II
- c. Polio Virus
- d. Human papilloma virus

33. Huntington gene provides information for:

- a. Protein
- b. Glycolipid
- c. Carbohydrate
- d. Enzyme

34. Increase in size of a cell is called:

- a. Hypertrophy
- b. Hyperplasia
- c. Metaplasia
- d. Dysplasia

35. Glucose content of CSF is not changed in:

- a. Acute pyogenic meningitis
- b. Acute viral meningitis
- c. Cryptococcal meningitis
- d. Tuberculosis meningitis

36. Subarachnoid haemorrhage occurs most often from the following:

- a. Hypertension
- b. Aneurysm
- c. Vascular malformations
- d. Bleeding disorders

Pharmacology

37. Actions of adrenaline are all EXCEPT:

- a. Increase in heart rate
- b. Bronchoconstriction
- c. Increase in blood sugar levels
- d. Increase in B.P

38. Dissociative anesthesia is seen with?

- a. Nitrous oxide
- b. Halothane
- c. Thiopentone
- d. Ketamine

39. Which of the following is a selective serotonin reuptake inhibitor (SSRI)?

- a. Bromocriptine
- b. Fluoxetine
- c. Selegiline
- d. Imipramine

40. Precursor of Dopamine is:

- a. Benserazide
- b. Entacapone
- c. Levodopa
- d. Bromocriptine

41. Termination of action of thiopentone sodium is due to:

- a. Excretion
- b. Metabolism
- c. Spontaneous degradation
- d. Redistribution

42. Corticosteroids are relatively contraindicated in all of the following conditions EXCEPT:

- a. Peptic ulcer
- b. Asthma
- c. Osteoporosis
- d. Diabetes mellitus

Regn. No.

Paper Code: MPTC-103

M.P.T. FIRST YEAR EXAMINATION, JUNE/JULY - 2016
APPLIED BASIC MEDICAL SCIENCES (CARDIO)
PAPER THREE

[Time allotted: Three hours]

[Max. Marks: 70]

Note: Attempt all questions

Draw suitable diagrams wherever necessary.

A: Short answer questions

(7 x 7 = 49)

ANATOMY

- Q. 1. Explain in brief about the coronary circulation and its clinical significance.
- Q. 2. Explain in brief about the anatomy of diaphragm with suitable diagrams.

PHYSIOLOGY

- Q. 3. Define cardiac cycle. What is the normal duration of a cardiac cycle? Briefly discuss the different phases of cardiac cycle. (2+1+4=7)
- Q. 4. What are baroreceptors? Discuss the role of baroreceptors and kidney in blood pressure control. (2+3+2=7)

✓ PATHOLOGY

- Q. 5. Write short notes on:

- a. Phagocytosis
- b. Apoptosis

- Q. 6. Discuss MI.

PHARMACOLOGY

- Q. 7. a. Enumerate the drugs used in congestive heart failure. Discuss briefly mechanism of action & adverse effects of digoxin.
- b. Describe the factors modifying drug action.

Regn. No.

Paper Code: MPTC-103

M.P.T. FIRST YEAR EXAMINATION, JUNE/JULY - 2016
APPLIED BASIC MEDICAL SCIENCES (CARDIO)
PAPER THREE (MCQ)

Time allotted for MCQ-30 minutes

B : MCQs (Single response type):

(½ x 42= 21)

Anatomy

1. Diaphragm is a type of _____ muscle.
 - a. Cardiac
 - b. Smooth
 - c. Skeletal
 - d. Striated
2. RCA and LCA are originated from _____.
 - a. Aortic sinus
 - b. Carotid sinus
 - c. Mitral sinus
 - d. Tricuspid sinus
3. Normally, apex of the heart is located at:
 - a. Left fifth intercostal space at midclavicular line
 - b. Left fifth intercostal space at anterior axillary line
 - c. Left fifth intercostal space at mid axillary line
 - d. Left fifth intercostal space at posterior axillary line
4. Out of the following structures, which doesn't pass through the diaphragm?
 - a. Trachea
 - b. Oesophagus
 - c. Aorta
 - d. None of the above
5. In foetal circulation, oxygenated blood reaches the fetus through which blood vessel?
 - a. Ductus arteriosus
 - b. Umbilical vein
 - c. Umbilical artery
 - d. Foramen ovale
6. Base of the heart is formed by _____.
 - a. Left ventricle
 - b. Right ventricle
 - c. Left atrium and right atrium
 - d. None of the above
7. Atherosclerosis principally affects which of the following component(s) of the vessel wall?
 - a. Intima
 - b. Intima, Media
 - c. Intima, Media, Adventitia
 - d. Endothelium
8. The ability of some cardiac muscle cells to initiate their own depolarization and cause depolarization of the rest of the heart is called:
 - a. Absolute refractory period
 - b. A functional syncytium
 - c. An action potential
 - d. Automaticity
9. Attached to the AV valve flaps are the:
 - a. Trabeculae carneae
 - b. Papillary muscles
 - c. Chordae tendineae
 - d. Pectinate muscles
10. Which amongst following is not a property of cardiac muscles?
 - a. Rhythmicity
 - b. Refractory period
 - c. Fatiguability
 - d. Automaticity

11. Among respiratory movements, 'pump handle movement' occurs at _____.
 - a. 2-6 ribs
 - b. 7-12 ribs
 - c. 1st rib
 - d. None of the above
12. Which amongst the following statements isn't true for cardiac muscle:
 - a. It has partial properties of both skeletal and smooth muscles.
 - b. It has an "intercalated disc"
 - c. It never gets fatigued
 - d. It doesn't has a refractory period

Physiology

13. Which of the following is true about myocardium?
 - a. Non-striated muscle
 - b. Gap junctions are absent
 - c. Multiple nuclei
 - d. Intercalated disc is present
14. Pacemaker of heart is located in:
 - a. Right atrium
 - b. Right ventricle
 - c. Left atrium
 - d. Left ventricle
15. Conduction velocity of impulse is highest in:
 - a. AV node
 - b. SA node
 - c. Purkinje fiber
 - d. Myocardium
16. Ejection fraction in a normal healthy individual is:
 - a. 65%
 - b. 90%
 - c. 100%
 - d. 45%
17. Normal blood pressure in healthy individual:
 - a. 80-100/70-80mmHg
 - b. 80-110/60-70mmHg
 - c. 100-120/60-70mmHg
 - d. 100-130/70-80mmHg
18. First heart sound is due to:
 - a. Closure of atrioventricular valves
 - b. Closure of semilunar valves
 - c. Opening of atrioventricular valves
 - d. Rapid filling of ventricle
19. In ECG, QRS complex is due to:
 - a. Atrial repolarization
 - b. Ventricular depolarization
 - c. Atrial depolarization
 - d. Ventricular repolarization
20. Normal heart rate is:
 - a. 80-120 beats/min
 - b. 70-110 beats/min
 - c. 60-100 beats/min
 - d. 50-90 beats/min

PTO

21. Maximum amount of blood is present in:

- a. Arterioles
- b. Chambers of heart
- c. Venous system
- d. Pulmonary circulation

22. Effect of parasympathetic stimulation to heart leads to:

- a. Decrease in HR
- b. Increase in BP
- c. Increase cardiac output
- d. Increase stroke volumes

23. Bradycardia is when heart rate is:

- a. Less than 60 beats/min
- b. More than 60 beats/min
- c. More than 100 beats/min
- d. More than 90 beats/min

24. Duration of ventricular systole in a normal cardiac cycle:

- a. 0.5 sec
- b. 0.3 sec
- c. 0.8 sec
- d. 0.1 sec

Pathology

25. Inflammatory fluid rich in leukocytes and parenchymal debris is called:

- a. Exudate
- b. Transudate
- c. Oedema fluid
- d. Plasma

26. The first step of inflammation is:

- a. Transient vasoconstriction
- b. Leukocyte margination
- c. Phagocytosis
- d. Increased vascular permeability

27. Which of the following giant cells are seen in tuberculosis?

- a. Touton
- b. Langhan's giant cells
- c. Foreign body giant cells
- d. Tumor giant cells

28. The epithelioid cell in a granuloma is a:

- a. Modified epithelial cell
- b. Activated macrophage
- c. Small lymphocytes
- d. None of the above

29. Atopy is an example of:

- a. Systemic anaphylaxis
- b. Local anaphylaxis
- c. Antibody dependant cellular cytotoxicity
- d. Complement dependant cytotoxicity

30. In AIDS, there is deficiency of:

- a. CD2 cells
- b. CD3 Cells
- c. CD4 Cells
- d. CD5 Cells

31. Which congenital heart disease manifests in adults?

- a. Bicuspid aortic valve
- b. Mitral valve prolapse
- c. ASD
- d. All of the above

32. The vessel most commonly involved in atherosclerosis is:

- a. Right coronary A
- b. Circumflex A
- c. Left anterior descending A
- d. A & B equally

33. Anitschkow cells in RHD are modified:

- a. Neutrophils
- b. Macrophages
- c. Lymphocytes
- d. Plasma Cells

34. Mixing of oxygenated blood with non oxygenated blood takes place in:

- a. Mitral stenosis
- b. High blood pressure
- c. Ventricular Septal Defect
- d. Increased heart rate

35. Pulmonary artery arises from:

- a. Lung
- b. Right atrium
- c. Left ventricle
- d. Right ventricle

36. The enzyme which remains high for longest period in acute MI is :

- a. CK
- b. Troponin
- c. SGPT
- d. LDH

Pharmacology

37. Cardioslective Beta blocker is:

- a. Propranolol
- b. Timolol
- c. Atenolol
- d. Labetolol

38. Physician induced/Drug induced diseases are called as :

- a. Idiosyncratic
- b. Iatrogenic
- c. Carcinogenic
- d. Teratogenic

39. Which of the following is selective COX-2 inhibitor?

- a. Ketorolac
- b. Indomethacin
- c. Etoricoxib
- d. Diclofenac

40. Nitrates are used for all of the following conditions EXCEPT:

- a. CHF
- b. Cyanide poisoning
- c. Esophageal spasm
- d. Renal colic

41. Coronary steal phenomenon is seen with:

- a. Diltiazem
- b. Digitalis
- c. Dipyridamole
- d. Diazoxide

42. The drug which can markedly potentiate the vasodilator action of organic nitrates:

- a. Propranolol
- b. Fluoxetine
- c. Hydrochlorothiazide
- d. Sildenafil

M.P.T. FIRST YEAR EXAMINATION, JUNE/JULY - 2016
MEDICAL & SURGICAL MANAGEMENT (ORTHO)
PAPER FOUR

[Time allotted: Three hours]

[Max. Marks: 70]

Note: Attempt all questions

Draw suitable diagrams wherever necessary.

A: Short answer questions

(7 x 9 = 63)

- Q. 1. Describe various stages of bone healing. Enumerate various factors that adversely affect the bone healing.
- Q. 2. What is fat embolism? Briefly write about its mechanism, clinical features and its management.
- Q. 3. Describe briefly various methodologies to treat fracture shaft of femur in different age groups. Enumerate the various complications of this fracture.
- Q. 4. Classify Pelvic injuries. Describe the use of well-leg traction in pelvic injuries with a diagrammatic illustration.
- Q. 5. A 32 year old electrician falls from electricity pole and sustains fracture of D₁₁ vertebrae. He is brought to emergency department with shock and bradycardia. Describe the various causes of shock in such a situation. How can we differentiate between them?
- Q. 6. Describe clinical features, diagnosis and management of a case of rickets.
- Q. 7. Write briefly about clinical features, diagnosis and management of tuberculosis of the hip joint.
- Q. 8. Write briefly about clinical features, diagnosis and management of recurrent dislocation of shoulder joint.
- Q. 9. Write short note on:
 - a. Lachman Test
 - b. Pivot shift test
 - c. Tinel's sign

M.P.T. FIRST YEAR EXAMINATION, JUNE/JULY - 2016
MEDICAL & SURGICAL MANAGEMENT (ORTHO)
PAPER FOUR (MCQ)

Time allotted for MCQ- 15 minutes

B : MCQs (Single response type):

(½ x 14= 7)

Select the most appropriate answer and encircle the alphabet against it

1. Chauffer's fracture is fracture of :
 - a. Radial Styloid
 - b. Carpal Scaphoid
 - c. Carpal Trapezium
 - d. Base of first meta-carpal
2. Most common benign bone tumour in females of 20-40 years is:
 - a. Osteochondroma
 - b. Osteoblastoma
 - c. Giant Cell Tumor
 - d. Fibrous dysplasia
3. Avascular necrosis is seen most commonly in fracture:
 - a. Proximal humerus fracture
 - b. Distal radius fractures
 - c. Scaphoid fractures
 - d. Navicular fractures
4. Wrist drop is seen in injury to:
 - a. Median nerve
 - b. Radial nerve
 - c. Ulnar nerve
 - d. Musculo-cutaneous nerve
5. Erb's palsy is caused by injury to:
 - a. Cervical Spine
 - b. Brainstem
 - c. Biceps, supinator and deltoid muscle
 - d. Brachial plexus
6. Barton's fracture is:
 - a. Fracture of distal cortico-cancellous junction of radius with dorsal subluxation of carpus.
 - b. Fracture of volar rim of distal radius with volar subluxation of carpal bones.
 - c. Fracture of radial styloid
 - d. None of the above
7. Lift off test is used to check which muscle:
 - a. Teres minor
 - b. Subscapularis
 - c. Supra-spinatus
 - d. Infra-spinatus
8. Sequestrum is seen in:
 - a. Acute osteo-myelitis
 - b. Septic arthritis
 - c. Chronic osteomyelitis
 - d. None of the above
9. Gallow's traction is used for:
 - a. Fracture shaft of femur.
 - b. Fracture tibia.
 - c. Fracture neck of femur.
 - d. Fracture humerus.
10. A fracture through pars interarticularis of C2 vertebrae is called by the name:
 - a. Hangman's fracture
 - b. Clay shoveler's fracture
 - c. Die punch fracture
 - d. Aviator's fracture
11. Bohler's angle is decreased in fracture of:
 - a. Navicular
 - b. Talus
 - c. Calcaneum
 - d. Cuboid
12. Most common visceral organ to get injured in a pelvic fracture is:
 - a. Bladder
 - b. Ureter
 - c. Kidney
 - d. Urethra
13. Greenstick fracture is:
 - a. Fracture in children
 - b. Spiral fracture of the long bones
 - c. Undisplaced fracture
 - d. A fracture where a part of cortex is fractured and other part is crumpled up
14. Tone is increased in muscles in which of the following conditions:
 - a. Cerebral Palsy
 - b. Neuropathy
 - c. Prolapsed inter-vertebral disc
 - d. Sciatica

Regn. No.

Paper Code: MPTN-104

M.P.T. FIRST YEAR EXAMINATION, JUNE/JULY - 2016
MEDICAL & SURGICAL MANAGEMENT (NEURO)
PAPER FOUR

[Time allotted: Three hours]

[Max. Marks: 70]

Note: Attempt all questions

Draw suitable diagrams wherever necessary.

A: Short answer questions

(9 x 7 = 56)

Medical Management (Neuro)

- Q. 1. Write differences between Guillain Barre Syndrome and Transverse Myelitis
- Q. 2. Write a short note on Dementia
- Q. 3. What are the differences between CSF picture of Pyogenic Meningitis and Tuberculous Meningitis
- Q. 4. Write a short note on Intracerebral haemorrhage

Surgical Management (Neuro)

- Q. 5. What are the cause of backache ? How do you manage a patient with lumbar disc prolapse ?
- Q. 6. What is Glasgow coma scale ? Discuss its components.
- Q. 7. What is hydrocephalus ? What are the signs and symptoms of hydrocephalus in a one year old child ? How do you manage hydrocephalus ?
- Q. 8. Define syringomyelia ? What are the causes and clinical features of syringomyelia ?
- Q. 9. Write short notes on :
 - a. Tethered cord
 - b. Arnold chiari malformation

M.P.T. FIRST YEAR EXAMINATION, JUNE/JULY - 2016
MEDICAL & SURGICAL MANAGEMENT (NEURO)
PAPER FOUR (MCQ)

Time allotted for MCQ- 15 minutes

B : MCQs (Single response type):

(½ x 14= 07)

Select the most appropriate answer and encircle the alphabet against it

1. What is not true about RAMSAY- HUNT syndrome
 - a. Caused by Varicella Zoster
 - b. There are vesicles in the external auditory canal
 - c. There is ipsilateral facial nerve palsy
 - d. It is painless condition
2. Which is not true about trigeminal neuralgia
 - a. Neurological deficit in the distribution of fifth nerve
 - b. Pain in the distribution of fifth nerve
 - c. Pain occurs on stimulation of trigger zone
 - d. Carbamazepine is the drug of choice
3. Which of the following do not cause Myopathy?
 - a. Vitamin D deficiency
 - b. Vitamin B12 deficiency
 - c. Steroid intake
 - d. Hypothyroidism
4. Which of the following do not cause cerebellar ataxia?
 - a. Alcohol intoxication
 - b. Posterior circulation stroke
 - c. Vitamin B12 deficiency
 - d. Multiple sclerosis
5. Which of the following causes pure sensory neurological deficit?
 - a. Dorsal root ganglionopathy
 - b. Peripheral neuropathy
 - c. Plexopathy
 - d. Radiculopathy
6. Which of the following nutritional deficiencies do not cause neuropathy
 - a. Vitamin B12 deficiency
 - b. Vitamin B1 deficiency
 - c. Vitamin A deficiency
 - d. Vitamin B6 deficiency
7. Which of the following is not true about C5 radiculopathy?
 - a. Loss of biceps jerk
 - b. Sensory loss over the shoulder & outer aspect of arm
 - c. Weakness of triceps muscle
 - d. Weakness of deltoid muscle
8. Which of the following is not true about common peroneal nerve palsy
 - a. It causes foot drop
 - b. Eversion weakness
 - c. Inversion weakness
 - d. Loss of sensation over the outer aspect of leg & dorsum of feet.
9. Broca's area is most commonly supplied from
 - a) Left MCA – superior division
 - b) Left ACA
 - c) Left PCA
 - d) Rt MCA
10. Wernicke's area is most commonly supplied from
 - a) Left MCA – superior division
 - b) Left MCA- inferior division
 - c) Left ACA
 - d) Left PCA
11. What is not true about posterior column
 - a) It takes pain and temperature sensation
 - b) It takes joint position and vibration sensation
 - c) Involved in vitamin B12 deficiency
 - d) Lesion causes ipsilateral loss of sensation
12. What is not true about spinothalamic tract
 - a) It takes pain and temperature sensation
 - b) It takes joint position and vibration sensation
 - c) Involved in Brown sequard syndrome
 - d) Lesion causes contralateral loss of sensation
13. Crossed hemiplegia is seen in
 - a) Brainstem lesion
 - b) Thalamic lesion
 - c) Cortical lesion
 - d) Internal capsule lesion
14. Dense hemiplegia with good sensorium is seen in
 - a) Brainstem lesion
 - b) Thalamic lesion
 - c) Cortical lesion
 - d) Internal capsule lesion

Regn. No.

Paper Code: MPTC-104

M.P.T. FIRST YEAR EXAMINATION, JUNE/JULY - 2016
MEDICAL & SURGICAL MANAGEMENT (CARDIO)
PAPER FOUR

[Time allotted: Three hours]

[Max. Marks: 70]

Note: Attempt all questions
Draw suitable diagrams wherever necessary.

A: Short answer questions

(7 x 8 = 56)

Discuss briefly:

- Q. 1.** Management of MI
- Q. 2.** ECG changes Electrolyte imbalance
- Q. 3.** Management of Atrial fibrillation.
- Q. 4.** Management of Heart Failure
- Q. 5.** Causative organisms of Community acquired pneumonia & pathological stages of pneumonia.
- Q. 6.** Lung abscess, its etiopathogenesis and management.
- Q. 7.** Causes & management of ARDS.
- Q. 8.** Flail chest and its management.

Regn. No.

Paper Code: MPTC-104

M.P.T. FIRST YEAR EXAMINATION, JUNE/JULY - 2016
MEDICAL & SURGICAL MANAGEMENT (CARDIO)
PAPER FOUR (MCQ)

Time allotted for MCQ- 15 minutes

B : MCQs (Single response type):

(½ x 28= 14)

Select the most appropriate answer and encircle the alphabet against it

1. Which of the following drugs is used for Heart Failure?
 - a. Levosimendan & Diuretics
 - b. Alpha blockers
 - c. Calcium Channel blocker
 - d. Beta-blocker
2. Patient presents with H/O recurrent giddiness. O/E, HR= 170 bpm, irregular. Which drug should not be used?
 - a. Beta blocker
 - b. Ca++ channel blockers
 - c. Cardace
 - d. Amiodarone
3. Which of the following drugs is not antiplatelet drug?
 - a. Ecosprin
 - b. Clopidogrel
 - c. Prasugrel
 - d. Metolal
4. A patient of CRHD presented with fever with chills & rigors. 2D Echo revealed vegetation. What is the diagnosis?
 - a. CHF
 - b. Infective endocarditis
 - c. Hypertension
 - d. Rheumatic fever
5. Which is given for rheumatic fever prophylaxis?
 - a. Erythromycin / penicillin.
 - b. Atenolol
 - c. Metoprolol
 - d. Furosemide
6. Which drug is given for treatment of HOCM?
 - a. Cardace
 - b. Beta-blocker
 - c. Beta- blocker + CCB
 - d. Dopamine
7. Which is the side effect of furosemide?
 - a. Hypokalemia
 - b. Hyperkalemia
 - c. Hypocalcemia
 - d. Hypoglycemia
8. Commonest cause of Constrictive pericarditis in India?
 - a. Malignancy
 - b. Tuberculosis
 - c. Hypothyroidism
 - d. Radiation
9. A patient presents with BP of 60/40. How will you manage the patient?
 - a. I.V. fluid with Dopamine
 - b. Beta blocker
 - c. Furosemide
 - d. Digoxin
10. A 74 year old male patient presents with history of retrosternal chest pain radiating to left arm associated with dyspnea and sweating. What will be the first Investigation?
 - a. ECG
 - b. Lipid Profile
 - c. X-ray chest
 - d. Troponin I / CKMB
11. A 42 years old female patient presents with H/O orthopnoea, PND. O/E JVP elevated, chest- B/L basal crepts. What is the diagnosis?
 - a. CAD
 - b. Congestive heart failure
 - c. CLD
 - d. CKD
12. Which of the following drug is not used for hypertension?
 - a. ACEI
 - b. ARB
 - c. Beta blocker
 - d. Dopamine
13. A 42 years old patient with BMI of 30 kg/m² presents with H/O headache. O/E his BP was found to be 160/90mmHg. How will you manage this patient ?
 - a. Life style modification
 - b. Lifestyle modification and antihypertensive medications.
 - c. Clonidine
 - d. Dopamine
14. Which of the following is not used for diagnosis heart failure?
 - a. 2D Echo
 - b. CXR
 - c. CKMB
 - d. BNP

PTO.....

15. Capnography is :

- a. Monitoring of blood pressure during anaesthesia
- b. Monitoring of concentration of inhaled gas
- c. Monitoring of concentration of exhaled CO₂
- d. Monitoring of central venous pressure

16. Hypercapnea at rest is most indicative of:

- a. Hypoventilation
- b. Right to left shunt
- c. Impaired diffusion
- d. CO poisoning

17. Respiratory acidosis is seen with?

- a. Starvation
- b. Hyperventilation
- c. Muscular dystrophy
- d. Vomiting

18. Regarding the airways and alveoli, the correct statement is--

- a. The trachea, bronchi and bronchioles are all prevented from collapsing by the cartilage in their walls.
- b. The small diameter airways are the main sites of airways resistance.
- c. The upper airways play an important role in protecting the lungs from airborne particles.
- d. The alveoli are the only site of gas exchange.

19. Which of the following is the first branching of the bronchial tree that has gas exchanging capabilities?

- a. Terminal bronchioles.
- b. Respiratory bronchioles.
- c. Alveoli
- d. Segmental bronchi

20. Which of the following concerning average lung volumes and capacities of a person at rest is TRUE?

- a. TLC > VC > TV > FRC
- b. TLC > FRC > VC > TV
- c. TLC > VC > FRC > TV
- d. TLC > FRC > TV > VC

21. Which of the following does NOT happen during inspiration?

- a. The ribs move upward.
- b. The diaphragm lifts up.
- c. The antero-posterior dimensions of the chest are increased.
- d. The transverse dimensions of the thorax are increased.

22. Which of the following is the primary regulating variable of the central chemoreceptors?

- a. PaO₂.
- b. PaCO₂
- c. arterial pH
- d. Input from stretch receptors.

23. Which of the following is function of the lungs?

- a. Metabolism
- b. Serves as a reservoir of blood for the left ventricle.
- c. Facilitates the exchange of O₂ and CO₂ between air and blood.
- d. All of the above.

The diaphragm, ribs and pleural cavity play critical roles in the process of respiration. Which of the following statements about these structures and their function are **true and which are false?**

24. The diaphragm attaches to the lower 6 ribs and costal cartilages. True / False

25. The diaphragm contracts to cause expiration. True / False

26. Visceral pleura covers the diaphragm. True / False

27. The external intercostal muscles actively elevate the ribs during inspiration. True / False

28. Visceral pleural surface is sensitive to pain. True / False

Regn. No.

Paper Code: MPT(O/N/C)-105

M.P.T. FIRST YEAR EXAMINATION, JUNE/JULY- 2016
BIostatISTICS & RESEARCH METHODOLOGY
PAPER FIVE

[Time allotted: Three hours]

[Max. Marks: 70]

Note: Attempt all questions
Draw suitable diagrams wherever necessary.

A: Short answer questions

(7 x 9 = 63)

- Q. 1.** What do you understand by measure of Central Tendency?
- Q. 2.** What are the components of research design?
- Q. 3.** Describe the concept of measurement in research in your own words.
- Q. 4.** Explain the following: A) ANOVA B) Type I and II errors
- Q. 5.** Enumerate properties of Normal Distribution Curve. What are the applications of normal distribution?
- Q. 6.** Previous surveys have demonstrated that the usual prevalence of dental caries among schoolchildren in a particular community is about 25%. How many children should be included in a new survey designed to test for a decrease in the prevalence of dental caries, if it is desired to be 90% sure of detecting a rate of 20% at the 5% level of singnificance?
 $\alpha=1.96$ (If CI is 95%), $\beta=0.84$ (If power is 90%)
- Q. 7.** What is Chi-square test? Explain its significance in statistical analysis.
- Q. 8.** A study was done to investigate whether there is a relationship between survival of patients with coronary heart disease and pet ownership. A representative sample of 92 patients with CHD was taken. Each of these patients was classified as having a pet or not and by whether they survived one year following their first heart attack. Of 53 pet owners, 50 survived. Of 39 non-pet owners, 28 survived.
Construct an appropriate graph for statistical analysis.
- Q. 9.** A local health department wishes to estimate the prevalence of tuberculosis among children under five years of age in its locality. How many children should be included in the sample so that the prevalence may be estimated to within 5 percentage points of the true value with 95% confidence, if it is known that the true rate is unlikely to exceed 20%?
 $\alpha=1.96$ (If CI is 95%)

M.P.T. FIRST YEAR EXAMINATION, JUNE/JULY - 2016
BIOSTATISTICS & RESEARCH METHODOLOGY
PAPER FIVE (MCQ)

Time allotted for MCQ- 15 minutes

B : MCQs (Single response type):

(0.5 x 14 = 7)

Select the most appropriate answer and encircle the alphabet against it

1. Which of the following is an example of nominal data?
 - a. Number of people on a course
 - b. Cancer staging scale
 - c. Different species of bird visiting a garden over the past week
 - d. Popularity rating of India top ten television programmes
2. Which of the following are examples of Interval/Ratio data?
 - a. Number of people on a course
 - b. Cancer staging scale
 - c. List of different species of bird visiting a garden over the past week
 - d. Heart rate
3. Which of the following are examples of Ordinal data?
 - a. Cancer staging scale
 - b. List of different species of bird visiting a garden over the past week
 - c. Popularity rating of India top ten television programmes
 - d. Heart rate
4. Correlation is a measure that makes use of a particular distribution, what is it?
 - a. Exponential
 - b. Chi square ($df=1$)
 - c. Bivariate normal
 - d. Uniform
5. Correlation is often assessed by eye; which type of plot is usually used for this purpose?
 - a. Histogram
 - b. Bar chart
 - c. Boxplot
 - d. Scatter plot
6. Which of the following statements is true concerning correlation?
 - a. A correlation is always between -2 and 2, a zero value indicates no clustering towards line
 - b. A correlation is always between -1 and 1, a zero value indicates all points on line
 - c. A correlation is always between -2 and 2, a zero value indicates all points on line
 - d. A correlation is always between -1 and 1, a zero value indicates all points on a horizontal line
7. A numerical value used as a summary measure for a sample, such as sample mean, is known as a:
 - a. Population parameter
 - b. Sample parameter
 - c. Sample statistic
 - d. Population mean
8. Since the population size is always larger than the sample size, then the sample statistic:
 - a. Can never be larger than the population parameter
 - b. Can never be equal to the population parameter
 - c. Can never be smaller than the population parameter
 - d. None of the above answers is correct.
9. μ is an example of a:
 - a. Population parameter
 - b. Sample statistic
 - c. Population variance
 - d. Mode
10. The mean of a sample is:
 - a. Always equal to the mean of the population
 - b. Always smaller than the mean of the population
 - c. Computed by summing the data values and dividing the sum by $(n - 1)$
 - d. Computed by summing all the data values and dividing the sum by the number of items
11. Since the mode is the most frequently occurring data value, it:
 - a. Can never be larger than the mean
 - b. Is always larger than the median
 - c. Is always larger than the mean
 - d. Must have a value of at least two
12. The difference between the largest and the smallest data values is the:
 - a. Variance
 - b. Interquartile range
 - c. Range
 - d. Coefficient of variation
13. The most frequently occurring value of a data set is called the:
 - a. Range
 - b. Mode
 - c. Mean
 - d. Median
14. The standard deviation of a sample of 100 observations equals 64. The variance of the sample equals:
 - a. 8
 - b. 10
 - c. 6,400
 - d. 4,096

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Regn. No.

Paper Code: MPT (O/N/C)-101

M.P.T. FIRST YEAR EXAMINATION, JUNE/JULY - 2017
APPLIED PHYSIOTHERAPY
PAPER FIRST

[Time allotted: Three hours]**[Max. Marks: 70]**

Note: Attempt all questions
 Draw suitable diagrams wherever necessary.

A: Short answer questions**(7 x 9 = 63)**

- Q. 1. What is scoliosis? Explain in detail about its assessment and management.
- Q. 2. Explain Sherrington's principles along with the techniques of PNF & examples.
- Q. 3. Define gait parameters; also explain joint ROM and muscle work in completion of one stride length in a normal gait.
- Q. 4. Differentiate between mobilization and manipulation. Also explain grades, indications and contraindications of Maitland mobilization.
- Q. 5. With supportive evidence, explain the efficacy of low frequency TENS in acute pain management.
- Q. 6. Explain the effectiveness of neuromuscular electrical stimulation (NMES) after anterior cruciate ligament reconstruction on quadriceps strength and function.
- Q. 7. Explain effectiveness of low level LASER therapy in tendinopathies.
- Q. 8. Explain research based effectiveness of short wave diathermy for the management of knee osteoarthritis.
- Q. 9. Explain the methods of applications, indications and contraindications of cryotherapy.

M.P.T. FIRST YEAR EXAMINATION, JUNE/JULY - 2017**APPLIED PHYSIOTHERAPY****PAPER FIRST (MCQ)****Time allotted for MCQ - 15 minutes****B : MCQs (Single response type):**

(½ x 14= 7)

Select the most appropriate answer and encircle the alphabet against it

1. The starting position for MMT for sternal fibers of Pectoralis major muscle in grade 3:
 - a. 135 degree flexion
 - b. 135 degree abduction
 - c. 90 degree flexion
 - d. 90 degree abduction
2. In lateral view, at the level of feet's, plumb line falls at:
 - a. Subtalar joint
 - b. Calcaneonavicular joint
 - c. Calcaneocuboid joint
 - d. Talocrural joint
3. If the weight of the patient is 63 kg, what is the maximum weight (approx) that can be applied for cervical traction?
 - a. 7 kg
 - b. 9 kg
 - c. 11 kg
 - d. 13 kg
4. During Hold Relax, an isometric contraction is applied to:
 - a. Agonist
 - b. Antagonist
 - c. Fixator muscle
 - d. Synergist
5. During cryotherapy, cold induced vasodilatation occurs after:
 - a. 5 minutes
 - b. 10 minutes
 - c. 15 minutes
 - d. 20 minutes
6. To generate an action potential, the cell membrane becomes more permeable to:
 - a. Potassium and calcium ions
 - b. Potassium ions
 - c. Sodium ions
 - d. Calcium ions
7. The medium frequency currents have a frequency of:
 - a. 50 Hz
 - b. 100-150 Hz
 - c. 1-1000 Hz
 - d. 2500 Hz
8. The circuit used to produce faradic type current is:
 - a. Multivibrator circuit
 - b. Surge circuit
 - c. Voltage halving circuit
 - d. Anode circuit
9. When direct current is passed through cathode, it increases excitability of the nerve. This is termed as:
 - a. Anelectronus
 - b. Catelectronus
 - c. Depolarization
 - d. Repolarization
10. The intensity of current, with a long duration stimulus, required to produce minimum muscle contraction is known as:
 - a. Chronaxie
 - b. Rheobase
 - c. Phonophoresis
 - d. Attenuation
11. Formation of tiny gas bubbles in tissues as a result of ultrasound vibration is called
 - a. Cavitation
 - b. Standing waves
 - c. Attenuation
 - d. Scattering
12. Which among these is a dry heating modality?
 - a. Hydrotherapy pool
 - b. Fluidotherapy
 - c. Whirlpool bath
 - d. Hubbard tank
13. While applying IFT, the beat frequency is kept variable to minimize accommodation. This is known as:
 - a. Spectrum
 - b. Sweep
 - c. Pre-modulation
 - d. Dynamic interference
14. The most reliable diagnostic test for carpal tunnel syndrome is:
 - a. Electromyography
 - b. Nerve conduction velocity
 - c. S.D. curve
 - d. Pulse ratio

M.P.T. FIRST YEAR EXAMINATION
JUNE/JULY - 2017
APPLIED BIOMECHANICS & ERGONOMICS

[Time allotted: Three hours]**[Max. Marks: 70]**

Note: Attempt all questions
Draw suitable diagrams wherever necessary.

A: Short answer questions :**(7 x 9 = 63)**

- Q. 1. Explain in detail about determinants of gait cycle.
- Q. 2. Explain in detail about use of cane contra laterally and its effects on painful hip joint.
- Q. 3. Write a short note on stabilizers of vertebral column.
- Q. 4. Explain in short:
a. Force of gravity
b. C.O.G
- Q. 5. Explain in detail about structure and composition of muscle.
- Q. 6. Explain stress-strain curve for a muscle.
- Q. 7. Explain about locking and unlocking of knee joint.
- Q. 8. Explain about temperature sensitivity and its effects on ligaments and tendon mechanics.
- Q. 9. Write down ergonomic modification for a 35 year old male who is computer worker by occupation having complained of tingling sensation in right hand and having low back ache since past 5 years.

M.P.T. FIRST YEAR EXAMINATION
JUNE/JULY - 2017
APPLIED BIOMECHANICS & ERGONOMICS
(MCQ)

Time allotted for MCQ - 15 minutes

B : MCQs (Single response type):

(½ x 14 = 7)

Select the most appropriate answer and encircle the alphabet against it

1. The moving of the hand is an example of :
 - a. Closed kinetic chain
 - b. Open kinetic chain
 - c. Pure gliding motion
 - d. Pure rocking motion
2. Principal extensor of the thigh in upright position is:
 - a. Gluteus minimus
 - b. Gluteus medius
 - c. Gluteus maximus
 - d. Hamstrings
3. The deltoid ligament across the ankle joint reinforces:
 - a. The ankle joint alone
 - b. The subtalar joint alone
 - c. The ankle & subtalar joint
 - d. The mid tarsal & metatarso-phalangeal joint
4. The rotator cuff consists of the tendons of the:
 - a. Subscapularis, supraspinatus, infraspinatus & teres major
 - b. Subscapularis, supraspinatus, infraspinatus & pectoralis major
 - c. Subscapularis, supraspinatus, infraspinatus & pectoralis minor
 - d. Subscapularis, supraspinatus, infraspinatus & teres minor
5. While running the phase of normal gait cycle that disappears is:
 - a. Stance
 - b. Swing
 - c. Double stance
 - d. Weight bearing
6. Initiation of acceleration of the stance limb is performed by:
 - a. Hamstrings
 - b. Hip extensor
 - c. Hip flexors
 - d. Quadriceps.
7. A rotator motion of the joint surface wherein all points on the moving joint surfaces rotate at a constant distance around a fixed axis of motion is referred to as:
 - a. Glide
 - b. Rock
 - c. Roll
 - d. Spin
8. The intradiscal pressure at L-3 is least in:
 - a. Supine
 - b. Sitting erect
 - c. Sitting supported
 - d. Standing
9. The close packed position for the glenohumeral joint is:
 - a. Adduction & medial rotation
 - b. Abduction & lateral rotation
 - c. Adduction & lateral rotation
 - d. Abduction & medial rotation
10. The average carrying angle in women is about:
 - a. 5-7 degree
 - b. 5-7 degree
 - c. 15-25 degree
 - d. 10-15 degree
11. Most of the levers in human body are designed for:
 - a. Speed
 - b. Power
 - c. Force
 - d. Strength
12. The backward leaning of the trunk resulting in hyperextension at the hip is described as:
 - a. Treldeberg's gait
 - b. Gluteus maximus gait
 - c. Gluteus medius gait
 - d. Waddling gait
13. The principal force which hold the shoulder blade to thorax is:
 - a. Scapulo-thoracic ligament
 - b. Atmospheric pressure
 - c. Serratus anterior muscle
 - d. Rhomboids muscle
14. The length axillary crutches is measured as patient lying supine with the:
 - a. Shoes on, from the apex of the axilla to the superior margin of medial malleolus
 - b. Shoes on, from the apex of the axilla to the lateral border of shoe
 - c. Shoes off, from the apex of the axilla to the lateral border of foot
 - d. Shoes off, from the apex of the axilla to the lower margin of medial malleolus

M.P.T. FIRST YEAR EXAMINATION, JUNE/JULY - 2017
APPLIED BASIC MEDICAL SCIENCES (NEURO)

[Time allotted: Three hours]

[Max. Marks: 70]

Note: Attempt all questions

Draw suitable diagrams wherever necessary.

A: Short answer questions

(7 x 7 = 49)

ANATOMY

Q. 1. Discuss the CSF circulation in brain and explain the functions of CSF.

Q. 2. Draw a labelled diagram of internal capsule and discuss the applied anatomy.

PHYSIOLOGY

Q. 3. Differentiate between:

- Upper and lower motor neuron paralysis
- Lateral and anterior spinothalamic tract

(3.5+3.5=7)

Q. 4. Draw electron microscopic structure of synapse. Define synapse and enumerate the properties of synapse.

(3+1+3=7)

PATHOLOGY

Q. 5. Write short notes on:

- Necrosis and its types
- Huntington's disease
- Alzheimer's disease

(4)

(5)

(5)

Q. 6. Discuss various types of meningitis.

PHARMACOLOGY

Q. 7. Write short notes on:

- Write management of morphine poisoning
- Write adverse effects of Phenytoin

(4)

(3)

M.P.T. FIRST YEAR EXAMINATION, JUNE/JULY - 2017
APPLIED BASIC MEDICAL SCIENCES (NEURO)
(MCQ)

Time allotted for MCQ - 40 minutes

(½ x 42 = 21)

B : MCQs (Single response type):**Anatomy**

1. Which of the following cervical nerve roots best corresponds with activation of the triceps muscle?
 - a. C5
 - b. C6
 - c. C7
 - d. T2
2. The upper and middle trunks of the brachial plexus combine to form the ____ cord:
 - a. Lateral
 - b. Posterior
 - c. Medial
 - d. Anterior
3. The upper, middle, and lower trunks of the brachial plexus combine to form the ____ cord:
 - a. Lateral
 - b. Posterior
 - c. Medial
 - d. Anterior
4. The lower trunk of the brachial plexus forms the ____ cord:
 - a. Lateral
 - b. Posterior
 - c. Medial
 - d. Anterior
5. Jerky and sudden random movements are often associated with a ____ lesion:
 - a. Midbrain
 - b. Basal ganglia
 - c. Subthalamic
 - d. Thalamus
6. Which of the following arteries supplies Broca's area?
 - a. ACA
 - b. MCA
 - c. PCA
 - d. Lateral striate
7. Which of the following arteries if ruptured can cause an oculomotor palsy?
 - a. CA
 - b. MCA
 - c. PCA
 - d. Lateral striate
8. Which of the following is **not true** concerning Brown-Sequard syndrome?
 - a. Contralateral spinothalamic deficits
 - b. Ipsilateral spinothalamic deficits
 - c. Ipsilateral dorsal column deficits
 - d. Ipsilateral pyramidal tract deficits
9. A lesion in the left medial lemniscus produces:
 - a. Loss of pain and temperature sense on the left side of the body
 - b. Loss of pain and temperature sense on the right side of the body
 - c. loss of vibration and position sense on the left side of the body
 - d. Loss of vibration and position sense on the right side of the body
10. A patient presents with marked weakness of his left arm, but he refuses to believe that his arm is paralyzed. When asked to copy a picture, using his right hand, he fails to accurately represent the left side of the image. His lesion is most likely in the:
 - a. Left frontal lobe
 - b. Left parietal lobe
 - c. Right parietal lobe
 - d. Right frontal lobe
11. Occlusion of an anterior cerebral artery would most likely lead to:
 - a. Contralateral homonymous hemianopsia
 - b. Contralateral arm weakness
 - c. Contralateral leg weakness
 - d. Wernicke's aphasia
12. Hemisection of the spinal cord (Brown-Sequard syndrome) most often results in signs below the lesion best described as:
 - a. Ipsilateral paralysis and contralateral loss of pain and temperature
 - b. Ipsilateral paralysis and contralateral loss of light touch and position sense
 - c. Contralateral paralysis and ipsilateral loss of pain and temperature
 - d. Contralateral paralysis and ipsilateral loss of light touch and position sense

Physiology

13. Higher intellectual functions are linked to:
 - a. Limbic system
 - b. Prefrontal cortex
 - c. Parietal cortex
 - d. Motor cortex
14. The satiety centre is located in which portion of hypothalamus?
 - a. Lateral nucleus
 - b. Preoptic area
 - c. Dorsomedial nucleus
 - d. Ventromedial nucleus
15. The functions of thalamus include ALL except:
 - a. A major sensory relay station
 - b. Play important role in genesis of EEG
 - c. Maintains conscious and alert state
 - d. Control of circadian rhythm
16. The nuclei of the cerebellum are the following except:
 - a. Dentatus
 - b. Globosus
 - c. Emboliformis
 - d. Striatum
17. Lowest level of integration of stretch reflex is at:
 - a. Spinal cord
 - b. Lower medulla
 - c. Upper medulla
 - d. Cerebral cortex
18. ANS regulates the activity of all except:
 - a. Heart
 - b. Sweat
 - c. Skeletal muscle
 - d. Glands of GIT
19. Body posture and complex coarse movements are controlled mostly by:
 - a. Cerebrum
 - b. Cerebellum
 - c. Extrapyramidal system
 - d. Spinal cord
20. Crude touch sensations are carried by:
 - a. Lateral spinothalamic tract
 - b. Ventral spinothalamic tract
 - c. Posterior columns
 - d. Pyramidal tract

21. All the following factors influence the velocity of nerve impulse except:
 - a. Diameter
 - b. Myelination
 - c. Temperature
 - d. Size of the cell body

22. The process of degeneration of peripheral nerve distal to the site of injury is termed:
 - a. Starling's degeneration
 - b. Marey's degeneration
 - c. Wallerian degeneration
 - d. Brodmann's degeneration

23. Withdrawl reflex is an example of:
 - a. Monosynaptic reflex
 - b. Bisynaptic reflex
 - c. Polysynaptic reflex
 - d. Asynaptic reflex

24. Fast pain is carried by:
 - a. A α fiber
 - b. A δ fiber
 - c. B fiber
 - d. C fiber

Pathology

25. Epithelioid cell granulomas are seen in:
 - a. Liquefactive necrosis
 - b. Gangrene
 - c. Fibrinoid necrosis
 - d. Caseous necrosis
26. Skeletal muscle cells can undergo:
 - a. Hyperplasia only
 - b. Hypertrophy only
 - c. Both hypertrophy & hyperplasia
 - d. Metaplasia
27. Continuously dividing cells are:
 - a. Cardiac muscle cells
 - b. Neuron cells
 - c. Columnar epithelial cells
 - d. None of these
28. Enzyme which is essential to prevent cell ageing is:
 - a. Catalase
 - b. Superoxide dismutase
 - c. Metalloproteinases
 - d. Telomerase

29. For metaplasia following holds true except:
- It is seen best in epithelial cells
 - It involves 'reprogramming' of stem cells
 - It can progress to cancer, if untreated
 - It is an irreversible change
30. Which scientist popularized the term 'cell' for the smallest living unit?
- Charles Darwin
 - Hargobind Khurana
 - Robert Hooke
 - None of the above
31. Subarachnoid hemorrhage results most often from:
- Vascular malformation
 - Aneurysm
 - Hypertension
 - None of these
32. Class-I HLA antigens are located on:
- All nucleated cells of body
 - T & B lymphocytes
 - Macrophages
 - Complement system
33. Dementia is a feature of:
- Transverse myelitis
 - Motor neuron disease
 - Huntington's disease
 - None of these
34. Turbid white CSF is seen in:
- Viral meningitis
 - Tubercular meningitis
 - Pyococcal meningitis
 - None of these
35. Primary central nervous tumors may arise from the following cells except:
- Neuroglia
 - Microglia
 - Neurons
 - Meninges
36. Compression injury to spinal cord most commonly involves:
- Cervical
 - Thoracic
 - Lumbar
 - None of these

Pharmacology

37. Short half-life of thiopentone is due to:
- Excretion
 - Metabolism
 - Spontaneous degradation
 - Redistribution
38. Which drug should not be given in pregnancy?
- Spirolactone
 - Phenytoin
 - Hydralazine
 - Methyl dopa
39. Antidote of methyl alcohol poisoning is:
- Barbiturate
 - Phenytoin
 - Fomipizole
 - Lamotrigine
40. Physiological antagonism is found in:
- Isoprenaline and salbutamol
 - Isoprenaline and adrenali
 - Isoprenaline and propanolol
 - Adrenaline and histamine
41. Which of the following is a selective COX 2 inhibitor?
- Celecoxib
 - Diclofenac
 - Nimesulide
 - Aspirin
42. Drug of choice for the treatment of status epilepticus is:
- Diazepam
 - Phenytoin
 - Lorazepam
 - Sodium valproate

Regn. No.

Paper Code: MPTN-104

M.P.T. FIRST YEAR EXAMINATION, JUNE/JULY - 2017
MEDICAL & SURGICAL MANAGEMENT (NEURO)

[Time allotted: Three hours]

[Max. Marks: 70]

Note: Attempt all questions

Draw suitable diagrams wherever necessary.

A: Short answer questions

(9 x 7 = ^{C3}66)

- Q. 1. Write the clinical features and management of Guillain Barre syndrome.
- Q. 2. Write the clinical features and management of Parkinson's disease.
- Q. 3. Describe management of complex partial seizures.
- Q. 4. How will you differentiate pyogenic meningitis from tubercular meningitis?
- Q. 5. What is the difference between a subdural and epidural hematoma? Briefly describe the role of cognitive rehabilitation in minor head injury.
- Q. 6. Describe medical management of acute spinal cord injury. Describe the physical therapy management in patients with quadriplegia.
- Q. 7. What is Carpel Tunnel Syndrome (CTS)? Briefly describe the role of non-medical conservative management in CTS.
- Q. 8. What is hydrocephalus? What are the treatment options for hydrocephalus?
- Q. 9. What is spasticity? Describe pathophysiology of spasticity and implications for neurorehabilitation

M.P.T. FIRST YEAR EXAMINATION, JUNE/JULY - 2017
MEDICAL & SURGICAL MANAGEMENT (NEURO)
PAPER FOUR (MCQ)

Time allotted for MCQ - 15 minutes

B : MCQs (Single response type):

(½ x 14 = 07)

Select the most appropriate answer and encircle the alphabet against it

1. Root value of biceps jerk:
 - a. C5
 - b. C6
 - c. C7
 - d. All of the above
2. Following are clinical features of transverse myelitis except:
 - a. Paraplegia or quadriplegia
 - b. Sensory level
 - c. Urinary retention
 - d. Glove and stocking sensory level
3. Proximal weakness of limbs is seen in:
 - a. Myopathy
 - b. Myasthenia gravis
 - c. Eaton Lambert syndrome
 - d. All of the above
4. Which of the following is not a clinical feature of L5 radiculopathy?
 - a. Sensory loss over the dorsum of foot
 - b. Extensor hallucis weakness
 - c. Absent knee jerk
 - d. Normal plantar flexion.
5. Which of the following do not have features of space occupying lesion in brain?
 - a. Brain abscess
 - b. Brain tumour
 - c. Subdural hematoma
 - d. Multiple sclerosis
6. Which of the following is not a clinical feature of hydrocephalus?
 - a. Headache
 - b. Papilloedema
 - c. Vomiting
 - d. Hemiplegia
7. Treatment of choice for trigeminal neuralgia is:
 - a. Carbamazepine
 - b. Phenytoin
 - c. Amitriptyline
 - d. Duloxetine
8. Which of the following is not a feature of poliomyelitis?
 - a. Sensory loss
 - b. Muscle atrophy
 - c. Loss of reflexes
 - d. Fever
9. Which of the following vitamin deficiency do not cause neuropathy?
 - a. Vitamine B₁₂
 - b. Vitamin B₆ (Pyridoxine)
 - c. Vitamin D
 - d. Vitamin B₁ (Thiamine)
10. Which of the following is not a feature of cerebral palsy:
 - a. Diplegia
 - b. Spasticity
 - c. Scissoring gait
 - d. Progressive encephalopathy
11. Which of the following is not a clinical feature of encephalitis?
 - a. Fever
 - b. Very high cell count in CSF.
 - c. Seizures
 - d. Focal neurological deficit.
12. Which of the following is not a clinical feature of motor neuron disease?
 - a. Atrophy of muscles
 - b. Bulbar palsy
 - c. Dementia
 - d. Fasciculations
13. Which is not true about trigeminal neuralgia?
 - a. Neurological deficit in the distribution of fifth nerve
 - b. Pain in the distribution of fifth nerve
 - c. Pain occurs on stimulation of trigger zone
 - d. Carbamazepine is the drug of choice
14. Which of the following do not cause cerebellar ataxia?
 - a. Alcohol intoxication
 - b. Posterior circulation stroke
 - c. Vitamin B₁₂ deficiency
 - d. Multiple sclerosis.

M.P.T. FIRST YEAR EXAMINATION, JUNE/JULY- 2017
BIOSTATISTICS & RESEARCH METHODOLOGY

[Time allotted: Three hours]

[Max. Marks: 70]

Note: Attempt all questions

Draw suitable diagrams wherever necessary.

A: Short answer questions

(7 x 9 = 63)

- Q. 1. Briefly discuss the steps involved in research process.
- Q. 2. Describe the concept of measurement in research in your own words.
- Q. 3. What do you understand by sampling methods?
- Q. 4. Define Normal Distribution. What is the difference between normal and standard normal distribution.
- Q. 5. Give your understanding of non-parametric or distribution free methods explaining their important characteristics.
- Q. 6. Short notes on:
 a. Simple hypothesis and Composite hypothesis
 b. Null Hypothesis and Alternative hypothesis
- Q. 7. A study was done to investigate whether there is a relationship between survival of patients with coronary heart disease and pet ownership. A representative sample of 92 patients with CHD was taken. Each of these patients was classified as having a pet or not and by whether they survived one year following their first heart attack. Of 53 pet owners, 50 survived, of 39 non-pet owner, 28 survived.
 a. Construct an appropriate graph for statistical analysis.
 b. Calculate association for the proportion of patients surviving at least one year beyond the first heart attack in each of the groups.

Q. 8.

An investigator working for a national programme of immunization seeks to estimate the proportion of children in the country who are receiving appropriate childhood vaccinations. How many children must be studied if the resulting estimate is to fall within 10% (not 10 percentage points) of the true proportion with 95% confidence? (The vaccination coverage is not expected to be below 50%.)

$$\alpha = 1.96 \text{ (If CI is 95\%)}$$

- Q. 9. Serum cholesterol level of 09 patients, before and after giving a drug, are given below. Comment about effect of drug on patient.

Patient	1	2	3	4	5	6	7	8	9
Before	250	260	255	280	280	250	200	220	260
After	220	262	250	240	250	260	180	220	250

t (at alpha 5% at 8 df = 1.86)

M.P.T. FIRST YEAR EXAMINATION, JUNE/JULY - 2017
BIOSTATISTICS & RESEARCH METHODOLOGY
(MCQ)

Time allotted for MCQ- 15 minutes

(0.5 x 14 = 7)

B : MCQs (Single response type):

Select the most appropriate answer and encircle the alphabet against it:

1. Correlation is often assessed by eye, which type of plot is usually used for this purpose?
 - a. Histogram
 - b. Bar chart
 - c. Boxplot
 - d. Scatter plot
2. Statistical Power is affected by several factors which of the following is false:
 - a. Effect size, increasing it, increases power
 - b. Sample size, increasing it, increases power
 - c. Type one error (α), increasing it, increases power
 - d. Type two error (β), increasing it, increases power
3. A numerical value used as a summary measure for a sample, such as sample mean, is known as a:
 - a. Population parameter
 - b. Sample parameter
 - c. Sample statistic
 - d. Population mean
4. Since the population size is always larger than the sample size, then the sample statistic:
 - a. Can never be larger than the population parameter
 - b. Can never be equal to the population parameter
 - c. Can never be smaller than the population parameter
 - d. None of the above answers is correct.
5. The variance of a sample of 81 observations equals 64. The standard deviation of the sample equals:
 - a. 0
 - b. 4096
 - c. 8
 - d. 6,561
6. Non-parametric tests include:
 - a. ANOVA
 - b. Student's t-test
 - c. Chi-squared test
 - d. Wilcoxon signed rank test
7. The stages of a malignant disease (cancer) is recorded using the symbols 0, I, II, III, IV. We say that the scale used is:
 - a. Alphanumeric
 - b. Numerical
 - c. Ordinal
 - d. Nominal
8. The average of a series of numerical values is:
 - a. The sum of the values divided by their number
 - b. Lower than the minimum value in the series
 - c. Lower than the maximum value in the series
 - d. An indicator of central tendency for the values of the series
9. Which of the following is not a measure of central location?
 - a. Mean
 - b. Median
 - c. Variance
 - d. Mode
10. If a data set has an even number of observations, the median:
 - a. Cannot be determined
 - b. Is the average value of the two middle items
 - c. Must be equal to the mean
 - d. Is the average value of the two middle items when all items are arranged in ascending order
11. The sum of deviations of the individual data elements from their mean is:
 - a. Always greater than zero
 - b. Always less than zero
 - c. Sometimes greater than and sometimes less than zero, depending on the data elements
 - d. Always equal to zero
12. The value that has half of the observations above it and half the observations below it is called the:
 - a. Range
 - b. Median
 - c. Mean
 - d. Mode
13. Which of the following statements is true concerning correlation?
 - a. A correlation is always between -2 and 2, a zero value indicates no clustering towards line
 - b. A correlation is always between -1 and 1, a zero value indicates all points on line
 - c. A correlation is always between -2 and 2, a zero value indicates all points on line
 - d. A correlation is always between -1 and 1, a zero value indicates all points on a horizontal line
14. The correlation coefficient is based upon another measure, what is it?
 - a. Variance
 - b. Co-relation
 - c. Contingency coefficient
 - d. Covariance