

# Question Paper

Exam Date & Time: 30-May-2024 (10:00 AM - 12:00 PM)



## MANIPAL ACADEMY OF HIGHER EDUCATION

SIXTH SEMESTER BPT/BOT/B.Sc. (ESS/ RRT & DT / RT / MIT) / FOURTH SEMESTER B.Sc. (PFT / CVT / CND / MLT / HIM / BOPT / BAOTT / RT / EMT / PHYSICIAN ASSISTANT / PSYCHOLOGY / NMT) / EIGHT SEMESTER (BPT / BOT) /  
SECOND SEMESTER BASLP DEGREE EXAMINATION - MAY/JUNE 2024  
SUBJECT: BST3201 / STAT 402 / BST 3202 - BIOSTATISTICS AND RESEARCH METHODOLOGY / BIOSTATISTICS /  
BASIC BIOSTATISTICS AND RESEARCH METHODOLOGY  
(2016/2020/2022 SCHEME)

Marks: 50

Duration: 120 mins.

Answer all the questions.

- |     |  |     |
|-----|--|-----|
| 1A) | Elaborate graphical representation with examples.  | (5) |
| 1B) | Explain the properties of normal distribution with diagram.  | (5) |
| 2A) | Describe different types of clinical study designs.  | (5) |
| 2B) | Write short notes on non-probability sampling.   | (5) |
| 3A) | The triglycerides (serum) (in mg/dL) of 10 patients were as follows:<br>155, 150, 106, 89, 63, 68, 144, 125, 130, 74<br>Calculate mean, and standard for the above data. | (5) |
| 3B) | Define the following: (i) Incidence rate (ii) prevalence rate.   | (5) |
| 3C) | Discuss about regression analysis and its two equations.   | (5) |
| 3D) | Write short notes on research process.   | (5) |
| 4A) | Define skewness.   | (2) |
| 4B) | The following are the weights for 10 patients. Calculate range and mode 60, 54, 74, 82, 59, 63, 72, 89, 58, 85.  | (2) |
| 4C) | What is meant by systematic sampling?  | (2) |
| 4D) | Define scatter plot.   | (2) |
| 4E) | Define case report.  | (2) |

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# Question Paper

Exam Date & Time: 23-May-2024 (10:00 AM - 01:00 PM)



## MANIPAL ACADEMY OF HIGHER EDUCATION

SIXTH SEMESTER BPT DEGREE EXAMINATION - MAY/JUNE 2024  
SUBJECT: PTH3202 - THEORETICAL CONCEPTS IN MUSCULOSKELETAL PHYSIOTHERAPY - II  
(2020 SCHEME)

Marks: 100

Duration: 180 mins.

Answer all the questions.

- 1) Explain the Clinical features and contributing factors for the development of patellofemoral pain syndrome. (20)
- 2) Plan an Physiotherapy intervention for patient with nonspecific low back Pain. (20)
- 3) Explain stages and stagewise clinical features and management for Adhesive capsulitis of shoulder. (10)
- 4) Explain the derangement syndrome of lumbar spine with principles of treatment as per McKenzie approach. (10)
- 5A) Mention intrinsic and excentric factors for development of sports injuries. (5)
- 5B) Plan an exercise program for a patient with spondylolisthesis. (5)
- 5C) Explain the Zones of extensor tendon injuries of hand. (5)
- 5D) Explain the Examination findings in Sacro-iliac joint dysfunctions. (5)
- 5E) Explain neural tissue tension testing procedure for lower limb. (5)
- 5F) Explain management of Tennis elbow. (5)
- 6A) What is Phase IV sports rehabilitation? (2)
- 6B) What is medial tibial stress syndrome? (2)
- 6C) Name the structures which get injured in zone 2 flexor tendon injury. (2)
- 6D) What is claudication? In which musculoskeletal condition of spine claudication may be evident. (2)
- 6E) List the contraindications for Manual therapy approaches for spine. (2)

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# Question Paper

Exam Date & Time: 25-May-2024 (10:00 AM - 12:00 PM)



## MANIPAL ACADEMY OF HIGHER EDUCATION

SIXTH SEMESTER BPT DEGREE EXAMINATION - MAY/JUNE 2024  
SUBJECT: PTH3241 - PROGRAM ELECTIVE - I : MOVEMENT SCIENCE IN NEUROREHABILITATION  
(2020 SCHEME)

Marks: 50

Duration: 120 mins.

Answer all the questions.

- |     |  |      |
|-----|--|------|
| 1)  | Explain in detail about quantitative methods of human movement analysis.             | (10) |
| 2)  | Explain in detail about task-based training.   | (10) |
| 3A) | Outline the characteristics of normal human movement.                                | (5)  |
| 3B) | Explain the principles of acquiring motor skills.                                    | (5)  |
| 3C) | List the theories of brain recovery mechanisms and explain any one theory in detail. | (5)  |
| 3D) | Outline the models used for predicting upper limb recovery after stroke.             | (5)  |
| 4A) | Mention ANY TWO advantages of qualitative methods of human movement analysis.        | (2)  |
| 4B) | Explain T, I, and E in motor control.  | (2)  |
| 4C) | Explain abnormal synergy in people with brain injury.                                | (2)  |
| 4D) | List ANY TWO non-invasive motor priming techniques.                                  | (2)  |
| 4E) | Define Exergaming.   | (2)  |

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# Question Paper

Exam Date & Time: 25-May-2024 (10:00 AM - 12:00 PM)



## MANIPAL ACADEMY OF HIGHER EDUCATION

SIXTH SEMESTER BPT DEGREE EXAMINATION - MAY/JUNE 2024  
SUBJECT: PROGRAM ELECTIVE - I : PTH3242 - PAIN SCIENCES  
(2020 SCHEME)

Marks: 50

Duration: 120 mins.

Answer all the questions.

- |     |  |      |
|-----|--|------|
| 1)  | A 21 -year old female patient (student ) presents with low back pain of 1- year duration. She complains of an NPRS of 8/10 and constant symptoms with aggravations of pain while sitting. Discuss assessment of pain within the biopsychosocial framework.<br>(2+8 = 10 marks) | (10) |
| 2)  | Explain Physiotherapy management of chronic musculoskeletal pain.  | (10) |
| 3A) | Explain clinical mechanisms of chronic pain.   | (5)  |
| 3B) | Explain Ascending pain modulation.   | (5)  |
| 3C) | Discuss the mechanisms of exercise induced hypoalgesia.  | (5)  |
| 3D) | Explain psychosocial risk factors for chronic pain.  | (5)  |
| 4A) | Define subacute pain.  | (2)  |
| 4B) | List the advantages of Faces pain scale.   | (2)  |
| 4C) | List objective tools for assessment of pain.   | (2)  |
| 4D) | What is pain neuroscience education?   | (2)  |
| 4E) | List static modalities for quantitative sensory testing.   | (2)  |

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# Question Paper

Exam Date & Time: 27-May-2024 (10:00 AM - 11:00 AM)



## MANIPAL ACADEMY OF HIGHER EDUCATION

SIXTH SEMESTER BPT/BOT DEGREE EXAMINATION - MAY/JUNE 2024  
SUBJECT: BPT 304/BOT 304 - GENERAL SURGERY - I  
(2016 SCHEME)

Marks: 50

Duration: 60 mins.

Answer all the questions.

- 1) Which of the following statements regarding shock is not true? (1)

[Hypovolaemic shock is due to a reduced circulating volume.](#)  
[Endocrine shock may present as a combination of hypovolaemic, cardiogenic or distributive shock.](#)  
[Cardiogenic shock is due to primary failure of the heart to pump blood to the tissues.](#)  
[Obstructive shock is seen in intestinal obstruction.](#)

- 2) Which of the following statements regarding shock is not true? (1)

[Tachycardia may not always accompany shock.](#)  
[Hypotension is one of the earliest signs of shock](#)  
[In septic shock, the peripheries will be warm and capillary refill will be brisk, despite profound shock.](#)  
[Loss of around 15% of the circulating blood volume is within normal compensatory mechanisms.](#)

- 3) Regarding resuscitation in shock, which statement is incorrect? (1)

[First-line therapy, is intravenous access and administration of intravenous fluids.](#)  
[Central venous catheters are more appropriate for rapid fluid replacement therapy.](#)  
[Hypotonic solutions \(dextrose etc.\) are poor volume expanders and should not be used in the treatment of shock.](#)  
[Adequate fluid resuscitation should be done prior to starting inotropes.](#)

- 4) Loss of what percentage of the circulating blood volume is within normal compensatory mechanisms? (1)

[10%](#)

[15%](#)

[25%](#)

[30%](#)

- 5) Which of the following statements is not true? (1)

[Primary haemorrhage is haemorrhage occurring immediately due to an injury \(or surgery\).](#)  
[Reactionary haemorrhage is delayed haemorrhage \(within 24 hours\) and is usually due to dislodgement of a clot by resuscitation, normalisation of blood pressure and vasodilatation.](#)  
[Secondary haemorrhage is due to technical failure, such as slippage of a ligature.](#)  
[Concealed haemorrhage is contained within the body cavity and must be suspected, actively](#)

[investigated and controlled.](#)

6) The four central strategies of damage control resuscitation (DCR) are: (1)

[Anticipate and treat acute traumatic coagulopathy.](#)

[Permissive hypotension until haemorrhage control.](#)

[Rapid crystalloid and colloid infusion to be continued.](#)

[Damage control surgery to control haemorrhage and preserve physiology.](#)

7) Which of the following statements regarding blood and blood products is not true? (1)

[Up to 600mL of blood is drawn, a maximum of three times each year.](#)

[Each unit is tested for evidence of hepatitis B, hepatitis C, HIV-1, HIV-2 and syphilis.](#)

[They are leukodepleted as a precaution against variant Creutzfeldt-Jakob disease](#)

[The ABO and rhesus D blood groups are determined, as well as the presence of irregular red cell antibodies.](#)

8) What is the volume of each unit of packed red cells? (1)

[250ml](#)

[430ml](#)

[200ml](#)

[330ml](#)

9) Which of the following statements regarding Fresh Frozen Plasma (FFP) is not true? (1)

[Fresh-frozen plasma is rich in platelets.](#)

[FFP is removed from fresh blood and stored at -40 to -50°C](#)

[It has a 2-year shelf life.](#)

[Rhesus D-positive FFP may be given to a rhesus D-negative woman.](#)

10) At what temperature are platelets stored? (1)

[2 to 5°C](#)

[-40 to](#)

[-50°C](#)

[10 to 20°C](#)

[20 to 24°C](#)

11) Complications from massive transfusion include all except (1)

[Coagulopathy](#)

[Hypercalcaemia](#)

[Hyperkalaemia](#)

[Hypokalaemia](#)

12) Regarding wound healing, which of the following statements is not true? (1)

[The inflammatory phase begins immediately after wounding and lasts 2-3 days.](#)

[The proliferative phase lasts from the third day to the third week, consisting mainly of fibroblast activity with the production of collagen and ground substance.](#)

[Tensile strength in the wound is maximal at the 10th week post injury](#)

[The remodelling phase is characterised by maturation of collagen \(type I replacing type III\).](#)

13) The general anaesthetic triad consists of all of the following, except (1)

[Amnesia: loss of awareness](#)

[Apnea](#)

[Analgesia: pain relief](#)

[Muscle relaxation](#)

14) Regarding complications after surgery, which statement is incorrect? (1)

[Upper airway obstruction is one of the commonest immediate postoperative complications](#)

[Obesity, smoking, chronic lung disease, poor nutritional status and obstructive sleep apnoea predispose to a higher risk of respiratory complications](#)

[Post-operative hypertension may be due to pain, agitation, anxiety, bladder spasm secondary to urinary catheterisation or pre-existing poorly-controlled hypertension](#)

[Late postoperative complications occur >48 hours of surgery.](#)

15) Which of the following surgical procedure does not have low risk of deep vein thrombosis? (1)

[Maxillofacial surgery](#)

[Neurosurgery](#)

[Total knee and hip replacement](#)

[Cardiothoracic surgery](#)

16) All of the following are treatment of rectal prolapse in an adult, except (1)

[Digital repositioning](#)

[Delorme's procedure](#)

[Altemier's procedure](#)

[Thiersch operation](#)

17) Which statement is incorrect regarding management of hernia? (1)

[All hernias require surgical repair.](#)

[Small hernias can be more dangerous than large.](#)

[Pain, tenderness and skin colour changes imply high risk of Strangulation](#)

[Femoral hernia should always be repaired.](#)

18) False statement regarding inguinal hernia: (1)

[It is the most common hernia in men and women](#)

[An indirect inguinal hernia is lateral and oblique](#)

[A direct inguinal hernia is a result of stretching and weakening of the abdominal wall just medial to the inferior epigastric vessels.](#)

[A sliding hernia is also called Pantaloon hernia](#)

19) Which of the following is not a key elements of an enhanced recovery programme following colorectal surgery? (1)

[Avoidance of mechanical bowel preparation](#)

[Preoperative carbohydrate loading.](#)

[Opiate analgesia](#)

[Early mobilisation](#)

20) Which is not true regarding stoma? (1)

[May be colostomy or ileostomy; temporary or permanent.](#)

[Temporary or defunctioning stomas are usually fashioned as loop stomas.](#)

[Ileostomy effluent is usually liquid whereas colostomy effluent is usually solid](#)

[Ileostomy and colostomy are spouted.](#)

21) The following are techniques for maintaining an airway, except (1)

[Chin lift and jaw thrust](#)

[Guedel airway](#)

[Nasal prongs](#)

[Supraglottic device](#)

22) Which of the following is not true regarding abdominal wound dehiscence? (1)

[Wound dehiscence most commonly occurs in the third postoperative day.](#)

[Usually presents with a serosanguinous discharge.](#)

[Malnourishment, Diabetes, COPD, obesity are some of the risk factors.](#)

[Most patients will need to return to the operating theatre for resuturing.](#)

23) Which of the following statements is not true regarding full thickness rectal prolapse? (1)

[Men are affected six times more often than women.](#)

[It is usually associated with a weak pelvic floor and/or chronic straining.](#)

[It is more than 4 cm and commonly as much as 10-15 cm in length.](#)

[The anal sphincter is characteristically patulous](#)

24) Which is not a function of the peritoneum? (1)

[Visceral lubrication](#)

[Nutrition](#)

[Pain perception](#)

[Fibrinolytic activity](#)

25) Regarding assessment of depth of burn wound, which of the following is incorrect? (1)

[Superficial burns have capillary filling](#)

[Deep partial-thickness burns blanch and have no sensation](#)

[Full-thickness burns feel leathery and have no sensation](#)

[Electrical contact burn are full thickness burns.](#)

26) Post-operative wound care, which statement is not true? (1)

[Within 48 hours of closure a layer of epidermal cells from the wound edge bridges the gap.](#)

[Infected wounds and haematomata may need treatment with antibiotics](#)

[Skin sutures or clips are usually removed between 6 and 10 days after surgery.](#)

[Steroids promote healing of wounds.](#)

27) The benefits of laparoscopic surgery are all except (1)

[Less postoperative pain.](#)

[Shorter duration of surgery.](#)

[Better cosmesis](#)

[Earlier return of normal physiological function](#)

28) Treatment of hypertrophic and keloid scars include all, except (1)

[Pressure - local moulds or elasticated garments](#)

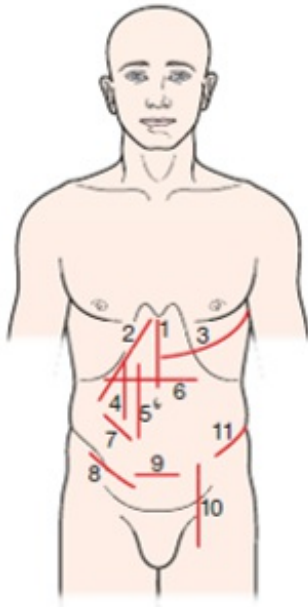
[Intralesional steroid injection \(triamcinolone\)](#)

[Massage with coconut oil.](#)

[Excision and postoperative radiation \(external beam or brachytherapy\)](#)

29) Name the incision marked as 2. (1)





[McBurney's incision](#)

[Kocher's incision](#)

[Chevron incision](#)

[Pfannensteil incision](#)

30) Which of the following grades of pressure sore is not correctly described? (1)

[Grade 1 : Non-blanchable erythema without a breach in the epidermis](#)

[Grade 2 : Partial-thickness skin loss involving the epidermis and dermis](#)

[Grade 3 : Full-thickness skin loss extending into the subcutaneous tissue through underlying fascia.](#)

[Grade 4 : Full-thickness skin loss through fascia with extensive tissue destruction, maybe involving muscle, bone, tendon or joint](#)

31) Which is a false statement regarding compartment syndrome? (1)

[Compartment syndromes typically occur in closed lower limb injuries.](#)

[They are characterised by severe pain, pain on passive movement of the affected compartment muscle.](#)

[Compartment pressures can be measured using a pressure monitor and a catheter placed in the muscle compartment.](#)

[In crush injuries with compartment syndrome that present several days after the event, a fasciotomy is indicated.](#)

32) Which of the following statements is not true regarding hernia? (1)

[A swelling with a cough impulse is not necessarily a hernia.](#)

[A swelling with no cough impulse may still be a hernia](#)

[Incisional hernias have been reported in 10-50% of laparotomy incisions](#)

[10% of femoral hernias present as an emergency with very high risk of strangulation](#)

33) Incorrect statement regarding intermittent claudication of lower limb (1)

[Debilitating cramp-like pain felt in the muscles.](#)

[Brought on by walking.](#)

[Present on taking the first step](#)

[Reliably relieved by rest both in the standing and sitting positions; usually within 5 minutes.](#)

34) All of the following are complications of colostomy, except (1)

[Parastomal hernia](#)  
[Prolapse](#)  
[Skin excoriation](#)  
[Electrolyte disturbance](#)

35) Treatment of slow colonic transit and obstructed defecation includes all, except (1)

[Dietary fibre and laxatives](#)  
[Biofeedback: pelvic floor training](#)  
[Pudendal nerve stimulation](#)  
[Prucalopride](#)

36) Management of anal incontinence includes all except (1)

[Stool bulking agents](#)  
[Biofeedback mechanism](#)  
[Augmentation of the anal sphincter using sartorius muscle sling](#)  
[Artificial bowel sphincter](#)

37) Nerve stimulation procedures such as acupuncture and transcutaneous nerve stimulation work by aiding in release of which chemical substance? (1)

[Adrenaline](#)  
[Endorphin](#)  
[Aldosterone](#)  
[Endothelial growth factor](#)

38) Which of the following is an incorrect statement? (1)

[Nociceptive pain arises from inflammation and ischaemia for which monoaminergic, tricyclic inhibitors and anticonvulsant drugs are the mainstay of treatment.](#)  
[Amputation of limbs may result in phantom limb pain; the likelihood is increased if the limb was painful before surgery](#)  
[Neuropathic pain arises from a dysfunction in the central or peripheral nervous system](#)  
[Local anaesthetic and steroid injections can be effective around an inflamed nerve and they reduce the cycle of constant pain transmission with consequent muscle spasm.](#)

39) The main complications after abdominal surgery are all except (1)

[Paralytic ileus](#)  
[Bleeding or abscess](#)  
[Anastomotic leakage](#)  
[Delirium](#)

40) Return of function of the gastrointestinal tract after abdominal surgery occurs in which of the following order? (1)

[Small bowel, large bowel and then stomach.](#)  
[Large bowel, stomach and then small bowel.](#)  
[Stomach, small bowel and then large bowel.](#)  
[The function returns to normal simultaneously after 24 hours of surgery.](#)

41) Operation of choice in coalescent mastoiditis is : (1)

[Cortical Mastoidectomy](#)  
[Modified Radical Mastoidectomy](#)  
[Radical Mastoidectomy](#)

[Fenestration operation](#)

42) Caloric test determines the function of: (1)

[Superior semicircular canal](#)

[Lateral semicircular canal](#)

[Posterior semicircular canal](#)

[Utricle](#)

43) The most common cause of peripheral episodic vertigo is: (1)

[Meniere's disease](#)

[Acoustic neuroma](#)

[Benign paroxysmal positional vertigo](#)

[Vascular occlusion of labyrinthine artery](#)

44) Non-neoplastic, non-inflammatory enlargement of parotid glands is seen in (1)

[Obesity](#)

[Hypothyroidism](#)

[Diabetes mellitus](#)

[All of the above](#)

45) A 4 year old child presented in emergency with mild respiratory distress. On laryngoscopy, she was (1)  
diagnosed to have multiple juvenile papillomatosis of the larynx. Next line of management is

[Tracheostomy](#)

[Microlaryngoscopy](#)

[Steroids](#)

[Antibiotics](#)

46) \_\_\_\_\_ is a type of refractive error in which the refraction varies in different meridians of the eye (1)

[Myopia](#)

[Hypermetropia](#)

[Presbyopia](#)

[Astigmatism](#)

47) The following surgery is done for cataract \_\_\_\_\_ (1)

[ICCE](#)

[ECCE](#)

[Phacoemulsification](#)

[All of the above](#)

48) The photoreceptors (sensory end organs) for vision are \_\_\_\_\_ (1)

[Rods and cones](#)

[Bipolar cells](#)

[Ganglion cells](#)

[Optic nerve](#)

49) Chalazion is a chronic lipogranulomatous inflammation of the \_\_\_\_\_ gland (1)

[Zeiss gland](#)

[Meibomian](#)

[gland](#)

[Moll gland](#)

[Lacrimal gland](#)

50) Retinoscopy is done to check \_\_\_\_\_ (1)

- [Retina](#)
- [Intraocular pressure](#)
- [Refractive error](#)
- [Angles of anterior chamber](#)

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# Question Paper

Exam Date & Time: 25-May-2024 (10:00 AM - 01:00 PM)



## MANIPAL ACADEMY OF HIGHER EDUCATION

SIXTH SEMESTER BPT DEGREE EXAMINATION - MAY/JUNE 2024  
SUBJECT: BPT 308TH - ORTHOPEDIC PHYSIOTHERAPY II  
(2016 SCHEME)

Marks: 100

Duration: 180 mins.

Answer all the questions.

- 1) What is the classification for disc herniation? Discuss the clinical features of disc herniation at L5-S1 level. Explain the physiotherapy management following acute disc herniation. (20)  
(4+10+6 = 20 marks)
- 2) What are the principles of McKenzie's approach? Discuss the evaluation and management strategies of dysfunction syndrome. (20)  
(10+10 = 20 marks)
- 3) What is carpal tunnel syndrome (CTS)? Discuss the clinical features and assessment of CTS. (10)
- 4) Explain the post-operative physiotherapy management of below-knee amputation along with pre-prosthetic training. (10)
- 5A) What is osteoporosis? Discuss the physiotherapy management. (5)
- 5B) What is developmental dysplasia of the hip? Discuss one diagnostic test. (5)
- 5C) Write a note on fractures of the cervical spine. (5)
- 5D) What is pronator teres syndrome? Discuss one test to diagnose pronator teres syndrome. (5)
- 5E) What are trigger points? (5)
- 5F) Discuss the signs and symptoms of vertebra basilar insufficiency. (5)
- 6A) What is meralgia paresthetica? (2)
- 6B) Name ANY TWO orthotics used in club foot. (2)
- 6C) What is autogenic inhibition? (2)
- 6D) What is lumbarisation? (2)
- 6E) Mention ANY TWO red flags for manual therapy. (2)

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# Question Paper

Exam Date & Time: 23-May-2024 (10:00 AM - 12:00 PM)



## MANIPAL ACADEMY OF HIGHER EDUCATION

**SIXTH SEMESTER BACHELOR OF PHYSIOTHERAPY (BPT) DEGREE EXAMINATION - MAY/JUNE 2024**  
**SUBJECT: BPT 310 - ELECTRODIAGNOSIS**  
**(2016 SCHEME)**

**Marks: 50**

**Duration: 120 mins.**

**Answer all the questions.**

- |     |   |      |
|-----|---|------|
| 1)  | Describe the procedure and clinical implications of H reflex.                       | (10) |
| 2)  | Explain the normal and abnormal spontaneous electromyography potentials.            | (10) |
| 3A) | Discuss the factors affecting nerve conduction studies.                             | (5)  |
| 3B) | Explain the principles, prerequisites, and merits of electromyographic biofeedback. | (5)  |
| 3C) | Describe the procedure of performing faradic galvanic test.                         | (5)  |
| 3D) | Discuss the recording parameters of repetitive nerve stimulation.                   | (5)  |
| 4A) | Mention the electrodiagnostic difference between neuropraxia and axonotmesis.       | (2)  |
| 4B) | Mention ANY TWO evoked potentials recorded from the central nervous system.         | (2)  |
| 4C) | What does duration and amplitude in nerve conduction study signify?                 | (2)  |
| 4D) | What is resting membrane potential?   | (2)  |
| 4E) | Mention ANY TWO needle electrodes used in electrodiagnosis.                         | (2)  |

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