

B.P.T.[1st Prof.]

BF/2024/04

Anatomy**[NEW REGULATIONS w.e.f. Admission 2021]****Time: 3 Hours****Max Marks: 80**

- Note:** 1.) *Attempt all questions.*
2.) **ATTEMPT BOTH PARTS IN SINGLE ANSWER BOOK ONLY.**
3.) **NO SUPPLEMENTARY SHEET SHALL BE ALLOWED/ PROVIDED**
4.) **The Student must write Q.P. Code in the space provided on the Title page of the Answer Book.**

SECTION - A**[40 Marks]**

1. **Write short Notes on:** [5x3=15]
(a) Synovial Joint (b) Facial Nerve
(c) Nephron (d) Sternocleidomastoid Muscle
(e) External Ear
2. **Answer the following question.** [10]
Describe Lung for its borders, surfaces, relations, Blood supply and Nerve supply.
3. **Attempt any ONE question out of the following two questions.** [15]
(a) Describe parts of Cerebrum, it's sulci, gyri and functional areas.
- OR
- (b) Describe Femoral triangle, its boundaries and content.

SECTION – B**[40 Marks]**

4. **Write short Notes on:** [5x3=15]
(a) Basal Ganglia
(b) Portal Vein
(c) Lymph Node
(d) Popliteus Muscle
(e) Musculocutaneous Nerve
5. **Answer the following question.** [10]
Describe Knee Joint, its type, articular surface, ligaments, nerve supply and movements with muscles producing them.
6. **Attempt any ONE question out of the following two questions.** [15]
(a) Describe Testis along with borders, surfaces and blood supply.
- OR**
- (b) Describe Spleen in detail.
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Physiology**[NEW REGULATIONS w.e.f. Admission 2021]****Time: 3 Hours****Max Marks: 80**

- Note:** 1.) *Attempt all questions.*
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SECTION - A**[40 Marks]****1. Write short Notes on :****[5x3=15]**

- | | |
|----------------------------|--|
| (a) Cell mediated immunity | (b) Dietary fibers |
| (c) Hypoxia | (d) Role of kidney in control of arterial blood pressure |
| (e) Cardiac cycle | |

2. Answer the following question.**[10]**

Discuss secretion, regulation and functions of male and female sex hormones.

3. Attempt any ONE question out of the following two questions.**[15]**

- (a) Describe in detail different lung volumes and capacities in healthy persons and in obstructive lung disease patients.

OR

- (b) Describe in detail various anterior pituitary hormones and their functions and regulation of secretion.

SECTION – B**[40 Marks]****4. Write short Notes.****[5x3=15]**

- (a) Pain pathway
- (b) Functions of basal ganglia
- (c) Length tension relation in skeletal muscle
- (d) Motor units
- (e) Resting membrane potential

5. Answer the following question.**[10]**

Discuss the cortico-spinal tract and its role in muscle movement.

6. Attempt any ONE question out of the following two questions.**[15]**

- (a) Describe in detail Energy sources and muscle metabolic system in short and long-distance runners.

OR

- (b) Describe in detail Cardio-respiratory adjustments during exercise.

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Biochemistry**[NEW REGULATIONS w.e.f. Admission 2021]****Time: 3 Hours****Max Marks: 80**

- Note:** 1.) *Attempt all questions.*
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SECTION - A**[40 Marks]****1. Answer the following:****[5x3=15]**

- (a) Essential fatty acids and their importance
- (b) Osmotic pressure and its physiological importance
- (c) Structure and functions of DNA
- (d) Primary structure of Proteins
- (e) Structure and functions of Nucleus

2. Answer the following question.**[2+5+3= 10]**

Define and classify Carbohydrates with suitable examples. Add a note on the Mucopolysaccharide and its importance

3. Attempt any ONE question out of the following two questions.**[15]**

- (a) Briefly describe the sources, biochemical functions and deficiency manifestations of Vitamin A. **[2+10+3= 15]**

OR

- (b) What are Enzymes? Discuss various factors affecting enzyme activity.

[5+10= 15]**SECTION – B****[40 Marks]****4. Write short Notes on:****[5x3=15]**

- (a) Atherosclerosis
- (b) Connective tissue proteins
- (c) Transamination
- (d) Thyroid hormone
- (e) Isotopes and therapeutic uses of isotopes

5. Answer the following question.**[10]**

Describe the Urea cycle and its regulations.

6. Attempt any ONE question out of the following two questions.**[15]**

- (a) Define TCA cycle and describe its pathway. Add a note on its energetics.

[2+10+3= 15]**OR**

- (b) Define Fatty acid synthesis. Describe briefly the reactions of de novo synthesis of fatty acid. Add a note how is it regulated? **[2+10+3= 15]**

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Electrotherapy-I**[NEW REGULATIONS w.e.f. Admission 2021]****Time: 3 Hours****Max Marks: 80**

- Note:** 1.) *Attempt all questions.*
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SECTION - A**[40 Marks]**

1. **All questions are compulsory. Write Notes on :**

[5x3=15]

- (a) Transistor
- (b) Choke coil
- (c) Production of EMF
- (d) Viscosity
- (e) Analogue display

2. **Answer the following question.**

[10]

Define TENS. Describe in detail about dosage parameters, types of TENS; and effect of different types of TENS.

3. **Attempt any ONE question out of the following two questions.**

[15]

- (a) Explain in detail about various modes of heat transfer. Explain physiological effect of superficial heat and contra-indications of superficial heat application.

OR

- (b) Write about production of infra-red radiation and its application methods; and precautions during application.

SECTION – B**[40 Marks]**

4. **All questions are compulsory. Write short Notes on:**

[5x3=15]

- (a) Electromagnetic induction
- (b) Reflection of sound
- (c) Short circuit
- (d) Use of amplifiers
- (e) Diode valve

5. **Answer the following question.**

[10]

Explain physical principles of light and its properties.

6. **Attempt any ONE question out of the following two questions.**

[15]

- (a) Explain in details various methods to determine dosimetry of UVR application.

OR

- (b) Describe in detail about Strength duration curve and its application. Explain about chronaxie, rheobase and pulse ratio

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Exercise Therapy – I**[NEW REGULATIONS w.e.f. Admission 2021]****Time: 3 Hours****Max Marks: 80**

- Note:** 1.) *Attempt all questions.*
2.) **ATTEMPT BOTH PARTS IN SINGLE ANSWER BOOK ONLY.**
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SECTION - A**[40 Marks]**

1. **All questions are compulsory.** [5x3=15]
(a) Principles of exercise therapy
(b) Effects and Uses of suspension
(c) Mat exercise
(d) Derived position of Hanging
(e) Line of gravity
2. **Answer the following question.** [10]
Describe the types, techniques, indications, contraindications, effects and uses of passive movements in detail.
3. **Attempt any ONE question out of the following two questions.** [15]
(a) Describe principle of Goniometry. Write down the technique to measure range of motion of Shoulder joints in detail.
OR
(b) Define MMT in detail and write down the principles and techniques of manual muscle testing of Ankle plantar and Dorsiflexors Muscles in detail.

SECTION – B**[40 Marks]**

4. **All questions are compulsory.** [5x3=15]
(a) Hold and Relax technique
(b) Deep friction
(c) TheraBand uses in therapeutic gymnasium
(d) Theories of motor control
(e) Fatigue
5. **Answer the following question.** [10]
Describe various techniques of relaxation with their effects and uses in detail.
6. **Attempt any ONE question out of the following two questions.** [15]
(a) Write down the names of equipments present in Gymnasium. Specify the effects and uses of Swiss ball, ladder and static cycle in brief.
OR
(b) Describe the type of soft tissue manipulation. Write down the physiological and therapeutic effects of massage in detail.

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English**[NEW REGULATIONS w.e.f. Admission 2021]****Time: 1 ½ Hours****Max Marks: 40****Note: 1.) *Attempt all questions.*****2.) ATTEMPT ALL QUESTIONS IN SINGLE ANSWER BOOK ONLY.****3.) NO SUPPLEMENTARY SHEET SHALL BE ALLOWED/ PROVIDED****4.) The Student must write Q.P. Code in the space provided on the Title page of the Answer Book.****1. a. Correct the following sentences: [5]**

- i. We decorating our house.
- ii. Radha dance well.
- iii. Anita playing on the piano.
- iv. They not taken food for two days.
- v. The gates were made of an iron.

b. Fill in the blanks with correct form from the words given in brackets: [5]

- i. We have _____ a long distance. (walk)
- ii. Why are you _____ me. (scold)
- iii. The team has _____ the practice. (finish)
- iv. The workers have _____ the road. (repair)
- v. This actor always _____ hard on his role. (work)

2. Read the passage given below and make notes using suitable short forms: [10]

Medical experts have cautioned against extensive use of aluminum cookware and foils, especially for acidic food preparations containing tamarind, tomatoes and green leafy vegetables which could lead to aluminum toxicity and consequent nerve disorder. The use of aluminum cookware should be limited and their use for making acidic food preparations should be avoided as they increase aluminum leaching into food, warn scientists from National Institute of Nutrition, Hyderabad. Chronic exposure to high levels of aluminum through food and water could lead to nerve and brain disorder such as Alzheimer's and Parkinson's disease, they say. Studies at NIN have shown that chronic exposure of rats to high aluminum and calcium deficient diets lead to degeneration of nerves and impairment of some brain functions. Earlier studies too have linked high aluminum intake with dementia and bone diseases. Keeping in view evidence of a link between high aluminum content in drinking water and senile dementia and Alzheimer's disease, a reduced intake of aluminum by kidney patients and elderly persons is advisable. NIN scientists say in a report that they have also advised regular monitoring of aluminum in blood in dialysis patients. Patients with kidney disorders are particularly susceptible to aluminum present in water, soil, plants and cooking utensils. It is added to drinking water as aluminum sulphate at the treatment plants, while soil contamination with it leads to accumulation in vegetables. It is also used in medicine such as antacids, analgesics and anti-diarrhoeals, in food and food preparations, foils, wrapping papers, cookwares and in water purification processes. NIN studies showed especially green leafy vegetables, spices 'Sambhar' contribute significantly to aluminum intake. Aluminum containing food additives are

generally used as buffers, neutralising agents, dough strength emulsifying agents for processed cheese and starters. Studies on experimental rats also showed that deficiencies of certain minerals such as calcium and iron enhance aluminum absorption and accumulation in tissues over a long period.

3. **Make a diary entry of your day's schedule during hospital duty.** [10]
4. **Write an essay of about 100 words on any one of the following topics:** [10]
 - a. Alternate Healing
 - b. Nano Technology and Medicine
 - c. Health and Medication
 - d. Saving Lives

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Pathology

[NEW REGULATIONS w.e.f. Admission 2021]

Time: 3 Hours

Max Marks: 80

- Note:** 1.) *Attempt all questions.*
2.) **ATTEMPT BOTH PARTS IN SINGLE ANSWER BOOK ONLY.**
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4.) **The Student must write Q.P. Code in the space provided on the Title page of the respective Answer Book.**

SECTION - A

[40 Marks]

1. Write short Notes.

[5x3=15]

- (a) Pathogenesis of granuloma formation
- (b) Steps in fracture healing
- (c) Differentiate between benign and malignant tumours
- (d) Etiopathogenesis of thrombus formation
- (e) Fallots tetralogy

2. Answer the following question.

[10]

Define necrosis. Describe in detail various types of necrosis.

3. Attempt any ONE question out of the following two questions.

[15]

- (a) Enumerate various COPD and discuss emphysema in detail.

OR

- (b) Etiopathogenesis of Hepatitis B.

SECTION - B

[40 Marks]

4. Write short Notes.

[5x3=15]

- (a) Vascular events of inflammation
- (b) DIC
- (c) Differentiate between wound healing by primary and secondary intention
- (d) Gout
- (e) Tubercular meningitis

5. Answer the following question.

[10]

Classify bone tumours and write in detail about osteosarcoma.

6. Attempt any ONE question out of the following two questions.

[15]

- (a) Define anaemia. Classify it. How will you investigate a case of anaemia.

OR

- (b) Enumerate various inflammatory lesions involving joints and describe rheumatoid arthritis in detail.

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Microbiology**[NEW REGULATIONS w.e.f. Admission 2021]****Time: 3 Hours****Max Marks: 80****Note: 1.) *Attempt all questions.*****2.) ATTEMPT BOTH PARTS IN SINGLE ANSWER BOOK ONLY.****3.) NO SUPPLEMENTARY SHEET SHALL BE ALLOWED/ PROVIDED****4.) The Student must write O.P. Code in the space provided on the Title page of the respective Answer Book.****SECTION - A****[40 Marks]****1. Write short Notes.****[5x3=15]**

- (a) Reproduction of bacteria
- (b) Electron microscope
- (c) Different shapes of bacteria with examples
- (d) Asepsis and disinfection
- (e) Bacterial transformation

2. Answer the following question.**[10]**

Discuss the role of microorganisms in the production of antibiotics.

3. Attempt any ONE question out of the following two questions.**[15]**

- (a) Discuss the types and principle of ELISA.

OR

- (b) Classification of antibodies and structure.

SECTION – B**[40 Marks]****4. Write short Notes.****[5x3=15]**

- (a) Polio Vaccine
- (b) Acquired immunity
- (c) Candida infection
- (d) Agglutination reaction
- (e) Common STIs

5. Answer the following question.**[10]**

Etiology and lab diagnosis of Leprosy.

6. Attempt any ONE question out of the following two questions.**[15]**

- (a) Explain the principles of aseptic technique in preventing healthcare-associated infections.

OR

- (b) Explain the mechanisms of antibiotic resistance in bacteria.

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Pharmacology**[NEW REGULATIONS w.e.f. Admission 2021]****Time: 3 Hours****Max Marks: 80**

- Note: 1.) **Attempt all questions.**
2.) **ATTEMPT ALL QUESTIONS IN SINGLE ANSWER BOOK ONLY.**
3.) **NO SUPPLEMENTARY SHEET SHALL BE ALLOWED/ PROVIDED**
4.) **The Student must write Q.P. Code in the space provided on the Title page of the Answer Book.**
5.) **Illustrate answer with suitable schematic diagrams.**

SECTION - A**[40 Marks]**

1. **Write short Notes.** [5x3=15]
a. Parenteral route of drug administration
b. Define plasma protein binding of drugs. What is its clinical significance?
c. Enumerate adverse drug reactions of tetracyclines.
d. Pharmacological treatment of acute attack of angina pectoris
e. Vitamin C as therapeutic agent
2. **Answer the following question.** [10]
Enumerate sedative-hypnotic drugs. Write mechanism of action, therapeutic uses & adverse effects of Diazepam.
3. **Attempt any ONE question out of the following two questions.** [15]
a. Classify skeletal muscle relaxant drugs. Write uses & adverse effects of skeletal muscle relaxants.
OR
b. Classify opioids. Write, uses, adverse effects & precautions for the use of Morphine.

SECTION – B**[40 Marks]**

4. **Write short Notes.** [5x3=15]
a. Glyceryl trinitrate
b. Drug synergism
c. Cotrimoxazole
d. Hydrocortisone
e. Mannitol
5. **Answer the following question.** [10]
Enumerate antimalarial drugs. Write mechanism of action, therapeutic uses & adverse effects of Chloroquine.
6. **Attempt any ONE question out of the following two questions.** [15]
a. Classify anti-hypertensive drugs. Write uses, adverse effects & precautions for the use of Angiotensin converting enzyme inhibitors.
OR
b. Classify Cephalosporins. Write mechanism of action, uses & adverse effects of third generation Cephalosporins.
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Electro Therapy – II**[NEW REGULATIONS w.e.f. Admission 2021]****Time: 3 Hours****Max Marks: 80**

- Note:** 1.) *Attempt all questions.*
2.) **ATTEMPT BOTH PARTS IN SINGLE ANSWER BOOK ONLY.**
3.) **NO SUPPLEMENTARY SHEET SHALL BE ALLOWED/ PROVIDED**
4.) **The Student must write Q.P. Code in the space provided on the Title page of the Answer Book.**

SECTION - A**[40 Marks]**

1. **Write short Notes.** [5x3=15]
a. Define Piezo Electric effect.
b. Capacitance
c. Cavitation
d. Coupling media
e. Magnetron
2. **Answer the following question.** [5+5= 10]
i) Contraindications of SWD. ii) Different applications of Cryotherapy.
3. **Attempt any ONE question out of the following two questions.** [15]
a. Write an essay on Therapeutic effect of SWD.
OR
b. Write an essay on therapeutic effects of Interferential Therapy.

SECTION – B**[40 Marks]**

4. **Write short Notes.** [5x3=15]
a. Define Lewis Hunting reaction.
b. What is Long duration Interrupted Direct current.
c. What is electrical impedance?
d. ENG
e. Acoustic Streaming
5. **Answer the following question.** [5+5= 10]
i) Write on therapeutic effects of LASER.
ii) Role of EMG in Physiotherapy.
6. **Attempt any ONE question out of the following two questions.** [15]
a. Write an essay on physiological & therapeutic effects of Ultrasonic therapy.
OR
b. Discuss principles of Biofeedback, indications & contra-indications in the usage of Biofeedback.

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Exercise Therapy – II**[NEW REGULATIONS w.e.f. Admission 2021]****Time: 3 Hours****Max Marks: 80**

- Note:** 1.) *Attempt all questions.*
2.) **ATTEMPT BOTH PARTS IN SINGLE ANSWER BOOK ONLY.**
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4.) **The Student must write Q.P. Code in the space provided on the Title page of the Answer Book.**

SECTION - A**[40 Marks]**

1. **All questions are compulsory.** [5x3=15]
a. Characteristics of normal posture
b. Frenkels exercise
c. Aerobic exercise
d. Hemiplegic gait
e. Clinical implications of Archimedes principle of hydrotherapy
2. **Answer the following question.** [10]
Define balance. What are the causes of imbalance and write on the management and techniques to improve balance in the patients of ankle sprain.
3. **Attempt any ONE question out of the following two questions.** [15]
a. Discuss abnormal postures and measures to correct them.
OR
b. Define stretching. Write about its types and stretching techniques for hip flexors.

SECTION – B**[40 Marks]**

4. **All questions are compulsory.** [5x3=15]
a. Effects of manipulation
b. Differentiate strength and endurance
c. Causes of incoordination
d. Types of aerobic exercise
e. Non-weight bearing gait pattern
5. **Answer the following question.** [10]
Discuss the principles and therapeutic effects of hydrotherapy. Also write indications and contraindications of Hydrotherapy.
6. **Attempt any ONE question out of the following two questions.** [15]
a. Describe Gait and its components. Discuss gait deviations and measures to correct them.
OR
b. Discuss Normal breathing mechanism and types of breathing exercises. Write indications, contraindications and precautions of breathing exercises.
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Biomechanics & Kinesiology**[NEW REGULATIONS w.e.f. Admission 2021]****Time: 3 Hours****Max Marks: 80**

- Note:** 1.) *Attempt all questions.*
2.) **ATTEMPT BOTH PARTS IN SINGLE ANSWER BOOK ONLY.**
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SECTION - A**[40 Marks]****1. All questions are compulsory.****[5x3=15]**

- (a) Isometric Contraction
- (b) Fibrous Joint
- (c) Newton's second law of motion
- (d) Force
- (e) Angle of Pull

2. Answer the following question.**[10]**

Classification of joints.

3. Attempt any ONE question out of the following two questions.**[15]**

- (a) Describe gait and its determinants.

OR

- (b) Describe biomechanics of Shoulder joint.

SECTION – B**[40 Marks]****4. All questions are compulsory.****[5x3=15]**

- (a) Stable equilibrium
- (b) Parallel Force System
- (c) Inertia
- (d) Connective tissue
- (e) Moment arm

5. Answer the following question.**[10]**

Describe group action of muscles.

6. Attempt any ONE question out of the following two questions.**[15]**

- (a) Describe posture and factors responsible for maintaining posture.

OR

- (b) Describe biomechanics of Elbow joint.

Sociology & Psychology**[NEW REGULATIONS w.e.f. Admission 2021]****Time: 3 Hours****Max Marks: 80****Note: 1.) *Attempt all questions.*****2.) *USE SEPARATE ANSWER BOOK FOR EACH PART.*****3.) *The Student must write Q.P. Code in the space provided on the Title page of the respective Answer Book.*****SECTION - A****[40 Marks]****QP Code: BPT207****[Sociology]****1. *Write short Notes.*****[5x3=15]**

- (a) How does socialization influence in rehabilitation of patients?
- (b) Discuss the effects of sickness on family.
- (c) Define the concept of community and role of rural communities in public health?
- (d) What do you mean by caste and discuss its features?
- (e) How do norms and folkways regulate human behaviour?

2. *Answer the following question.***[10]**

Define Sociology as a science of society. Discuss the application of knowledge of sociology in physiotherapy and occupational therapy?

3. *Attempt any ONE question out of the following two questions.***[15]**

- (a) Define Social groups. What is the influence of formal and informal groups on health and sickness?

OR

- (b) What are the consequences of Prostitution in relation to sickness and disability and discuss the remedies to prevent this problem?

SECTION - B**[40 Marks]****QP Code: BPT208****[Psychology]****1. *Write short Notes.*****[5x3=15]**

- (a) Mental age
- (b) Dollard and Miller concepts of learning
- (c) Stress management
- (d) Defense mechanism
- (e) Improving compliance

2. *Answer the following question.***[10]**

Define Psychology. Discuss its application in the field of health.

3. *Attempt any ONE question out of the following two questions.***[15]**

- (a) Discuss various principles of conditioning in modifying patients behaviour.

OR

- (b) Explain in detail psychological reactions of a patient during admission and treatment.
