**SRI DEVARAJ URS ACADEMY OF HIGHER EDUCATION & RESEARCH**
**(A DEEMED TO BE UNIVERSITY)**
**Bachelor of Physiotherapy, Second Year Semester-III**
**March/April-2025 Examination.**

**TIME - 3 HRS**                                                                **MAX MARKS: 100**

## EXERCISE THERAPY

**Q.P. CODE: B3060**

*Your answers should be specific to questions asked.*
*Draw neat labelled diagrams wherever necessary*

**LONG ESSAY (Answer any Two)**                                **2 X 10 = 20 Marks**

1.  Explain in detail the protocol of joint mobilization for shoulder joint and knee joint with relevant diagrams.
2.  Explain the tests of coordination. Describe the Frenkels exercise program for lower limbs in co ordination
3.  List the types of posture. Explain the principles of postural re-education.

**SHORT ESSAY (Answer any Ten)**                                **10X 5 = 50 Marks**

4.  Explain the indications and contraindications for massage
5.  Describe Delorme's technique with example.
6.  Discuss the indications and contraindications of hydrotherapy
7.  Define and compare Jacobson's & Mitchel' relaxation technique
8.  Discuss the principles of muscle strengthening and reeducation
9.  Discuss the types of balance retraining.
10. Write the causes for in co ordination and what exercises should be given.
11. Write the principles and training with Walking aids
12. Write the Classification and uses of active exercises
13. What are the Indications and contraindications of massage
14. Enumerate the indications for suspension therapy
15. Write about the indications and various types of stretching technique.

**SHORT ANSWER (Answer any Ten)**                                **10 X 3 = 30 Marks**

16. Define endurance and its types
17. What is isometric vs isotonic exercise?
18. Define effleurage.
19. Define flexibility
20. Define Repetition maximum
21. Define Muscle tone
22. What is stretching?
23. What are accessory glides?
24. Give the uses of Pulleys
25. Define V02 Max.
26. What is active vs inactive posture?
27. Define slow reversal

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TIME – 2.30 Hrs.                                                      MAX MARKS: 80

# Pathology & Microbiology

*Your answers should be specific to questions asked.*
*Draw neat labelled diagrams wherever necessary.*

## Section - A
# Pathology ( 40 marks )
### QP Code : B3076
**(Use Separate answer booklet for Section A & B)**

**LONG ESSAY**                                              **10X 10=10 Marks**

1. Define SHOCK. Describe the etiopathogenesis of hypovolemic shock.

**SHORT ESSAYS (ANSWER ANY THREE)**                        **3 X 5 = 15 marks**

2. Calcification
3. Hyperplasia
4. Add a note on separation of blood components.
5. Alcoholic liver disease

**SHORT ANSWERS (ANSWER ANY FIVE)**                        **5 X 3 = 15 marks**

6. Enumerate 3 benign tumours of liver
7. Mention 6 causes for splenomegaly
8. Enumerate occupational lung diseases.
9. Causes of leukocytosis.
10. Symptoms of vitamin A deficiency.
11. Vitamin A deficiency

## Section - B
## Microbiology ( 40 marks )
### QP Code : B3075

**LONG ESSAY**                                              **1 X 10 = 10 marks**

1. Draw a neat labelled diagram of bacterial cell. Describe the structure, types, functions and demonstration methods of flagella. (3+2+2+1+2)

**SHORT ESSAYS (ANSWER ANY THREE)**                        **3 X 5 = 15 marks**

2. Describe the principle, uses of Autoclave and add a note on controls used
3. Describe the structure and biological functions of Immunoglobulin M
4. Describe the mechanism of type I hypersensitivity
5. Mention the source and modes of transmission of infection and describe the clinical features of *Salmonella typhi* infection

**SHORT ANSWERS (ANSWER ANY FIVE)**                        **5 X 3 = 15 marks**

6. Name three bacterial vaccines
7. Enumerate three helminthic worms
8. Enumerate the fungi causing systemic infection
9. Enumerate three RNA viruses
10. Enumerate three diseases transmitted by mosquitoes
11. Draw a neat labelled diagram of bacterial growth curve.

❖   ❖   ❖

TIME – 2.30 HRS                                                                MAX MARKS: 80

## Research Methodology and Biostatistics

*Your answers should be specific to questions asked.*
*Draw neat labelled diagrams wherever necessary.*

### Section - A
## Research Methodology (40 marks)
### QP Code: B3085
*(Use Separate answer booklet for Section A & B)*

**LONG ESSAY**                                                    **1X 10 = 10 Marks**

1. What is Research Design? Explain the essential features & their suitability with examples.

**SHORT ESSAY (Answer any Three)**                               **3X 5 = 15 Marks**

2. Explain ethical issues in Research.
3. Explain problems encountered by researchers in India.
4. Mention the Merits & Demerits of collection of data using questionnaires.
5. What is Qualitative Research? List the methods of Qualitative Research.

**SHORT ANSWER (Answer any Five)**                               **5X 3 = 15 Marks**

6. Types of Questionnaire.
7. Sampling Methods.
8. List types of consent.
9. Composition of Institution Ethical Committee.
10. Define binary system with examples.
11. Steps in research writing.

### Section – B
### Biostatistics (40 Marks)
### QP Code: B3086
**(Use separate answer booklet for section B)**

**LONG ESSAY**                                                    **1X 10 = 10 Marks**

1. Define variation. Mention 3 measures of variation. Calculate standard deviation for the data on age of patients 58, 62, 60, 55, 65

**SHORT ESSAY (Answer any Three)**                               **3X 5 = 15 Marks**

2. Diagrammatic presentation of data
3. Explain Simple Random Sampling
4. Measures of dispersion
5. Difference between Schedule and Questionnaire

**SHORT ANSWER (Answer any Five)**                               **5X 3 = 15 Marks**

6. Skewness and Kurtosis
7. Representative sample
8. Discrete scale of measurement
9. Median an ideal measure for skewed distribution 'Justify.'
10. Methods of data presentation
11. Bar diagrams

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Time: 2.30 Hrs.                                                    [Max. Marks: 80]

**EXERCISE THERAPY**
**Q.P Code: B3310**

*Your answers should be specific to the questions asked.*
*Draw neat labelled diagrams wherever necessary.*

**LONG ESSAY**                                              2 X 10 = 20 Marks

1. List the various Mobility Aids. Write in detail about axillary crutch and shoes-on measure for axillary crutch.(5+5)

2. Define Suspension therapy. Explain the types of suspension and the suspension therapy technique for knee flexion and extension.(3+3+4)

**SHORT ESSAY**                                              6 x 5   = 30 Marks

3. Define balance. Explain detail on balance tests. (2+3)

4. Write in detail about apparent limb length and segmental limb length.(2.5+2.5)

5. List the principles and grades of mobilization.

6. Describe Gait training during stair climbing for non-weight bearing.

7. Explain the Neurophysiological principles of PNF

8. Explain MMT for triceps muscle from grade 2.

**SHORT NOTES**                                              10 x 3 = 30 marks

9. List the uses of Elbow crutch

10. Define Temporal and spatial summation

11. Define Vo2 max.

12. Explain single rope and double slings

13. List any 3 contraindications of PNF.

14. List the classification of active exercise

15. List out the merits of hydrotherapy

16. List any 3 disadvantages of group therapy

17. List out the principles of stretching.

18. Define apparent limb length

TIME – 2.30 Hrs.                                                                                    MAX MARKS: 80

# Pathology & Microbiology
*Your answers should be specific to questions asked.*
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## Section - A
## Pathology ( 40 marks )
### QP Code : 3325
**(Use Separate answer booklet for Section A & B)**

**LONG ESSAYS**                                                                    **1 X 10 = 10 marks**
1. Discuss Ischaemic heart disease, etiology and pathological features

**SHORT ESSAYS**                                                                   **3 X 5 = 15 marks**
2. Pathogenesis of Hypovolemic Shock
3. Discuss the classification of Genetic disorders.
4. Define Neoplasia, write differences between Benign and malignant tumors.

**SHORT ANSWERS**                                                                 **5 X 3 = 15 marks**
5. Mention complications of atherosclerosis
6. List 3 examples of hypertrophy.
7. Mention stages & complications of Lobar Pneumonia
8. List 4 examples of dysplasia
9. Cardinal signs of inflammation.

## Section - B
## Microbiology ( 40 marks )
### QP Code : B3326

**LONG ESSAY**                                                                       **1 X 10 = 10 marks**
1. Define & Classify Hypersensitivity. Describe the mechanism of type 1 Hypersensitivity (2+2+ 6)

**SHORT ESSAYS**                                                                    **3 X 5 = 15 marks**
2. Describe bacterial growth curve
3. Describe the diseases caused by *Staphylococcus aureus.*
4. Describe different sources and modes of transmission of infection with examples.

**SHORT ANSWERS**                                                                  **5 X 3 = 15 marks**
5. Mention three contributions of Louis Pasteur
6. Mention six steps of hand hygiene.
7. Enumerate three intestinal nematodes.
8. Enumerate three opportunistic mycoses.
9. Enumerate three autoimmune diseases.

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**TIME – 2.30 HRS**                                                        **MAX MARKS: 80**

## Research Methodology and Biostatistics

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### Section - A
## Research Methodology (40 marks)
### QP Code: B3335
*(Use Separate answer booklet for Section A & B)*

**LONG ESSAY**                                                        **1 X 10 = 10 Marks**

1. Describe the different types of research, clearly pointing out the difference between an experiment and a survey.

**SHORT ESSAY**                                                        **3 x 5 = 15 Marks**

2. Explain probability sampling with examples
3. List out the problems encountered by researchers in India
4. Write a comprehensive note on the "Task of defining a research problem".

**SHORT NOTES**                                                        **5 x 3 = 15 marks**

5. Define Plagiarism
6. Define falsification and fabrication
7. Define mean deviation
8. Define experience survey
9. Describe Randomized controlled design

### Section – B
### Biostatistics (40 Marks)
### QP Code: B3336
### (Use separate answer booklet for section B)

**LONG ESSAY**                                                        **1 X 10 = 10 Marks**

1. Explain in detail about the measures of central tendency, each with an example.

**SHORT ESSAY**                                                        **3 x 5 = 15 Marks**

2. Write in detail about the Uses of statistics in Physiotherapy.
3. Calculate Mean, median and mode for the following data.

| Frequency | 6 | 7 | 6 | 7 | 9 | 8 | 7 | 8 | 6 | 9 |
|-----------|---|---|---|---|---|---|---|---|---|---|

4. List the types of data and explain anyone.

**SHORT NOTES**                                                        **5 x 3 = 15 marks**

5. Chi square test
6. Explain test of significance
7. Explain any one measurement scale with an example.
8. Explain Probability
9. Standard deviation