



**SRI DEVARAJ URS ACADEMY OF HIGHER EDUCATION & RESEARCH
(A DEEMED TO BE UNIVERSITY)**

**Bachelor of Physiotherapy, Second Year Semester-III,
March 2026 Examination.**

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)

I. LONG ESSAY

10X 10=10 Marks

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

II. 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

III. 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 D deficiency disorders

Section - B

Microbiology (40 marks)

QP Code : B3075

I. 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)

II. 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

III. 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.

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Section - A

Pathology (40 marks)

QP Code: B3325

(Use Separate answer booklet for Section A & B)

I. LONG ESSAY

1 X 10 = 10 Marks

1. Discuss Vascular and cellular events in acute inflammation.

II.SHORT ESSAYS

3 X 5 = 15 Marks

2. Discuss the role of immunity in Tuberculosis and describe the diagnosis of tuberculosis.
3. Osteomyelitis.
4. What are obstructive lung diseases and explain any one disease in detail with pathogenesis

III.SHORT ANSWERS

5 X 3 = 15 Marks

5. List 4 examples of dysplasia.
6. List 3 clinical features of down syndrome
7. List consequences of hypertension.
8. List the causes of Vitamin B 12 deficiency.
9. List causes of Vitamin A deficiency.

Section - B

Microbiology (40 marks)

QP Code: B3326

I. LONG ESSAY

1 X 10 = 10 Marks

1. Define & Classify Sterilization. Draw a neat, labeled diagram of the Autoclave and describe its principle, uses, controls used (2+2+2+1+2+1)

II. SHORT ESSAYS

3 X 5 = 15 Marks

2. Describe the types of Acquired immunity with examples.
3. Classify fungal infections. Mention the modes of infection and describe the lesions caused by dermatophytes.
4. Describe the source, mode of transmission and clinical features of Streptococcus pneumoniae.

III. SHORT ANSWERS

5 X 3 = 15 Marks

5. Enumerate three complications of Plasmodium falciparum.
6. Mention the modes of transmission of Hepatitis B virus.
7. Enumerate three viral vaccines.
8. Enumerate three zoonotic infections.
9. Draw a neat, labelled diagram of Immunoglobulin M



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EXERCISE THERAPY

Q.P Code: B3310

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LONG ESSAY

2 X 10 = 20 Marks

1. Define Proprioceptive Neuromuscular Facilitation (PNF). Enumerate the uses of PNF. Illustrate and explain the neurophysiological principles of PNF. (3+4+3)
2. Explain tests for coordination. Describe Frenkel's exercise program for lower limb co-ordination.

SHORT ESSAY

6 x 5 = 30 Marks

3. Explain the types and progressive resisted exercise.
4. Write the indications and contraindications of massage.
5. Discuss the physiological effect of joint Mobilization.
6. Explain the elbow crutch and write in detail about crutch muscles.
7. Write in detail Mitchel's relaxation technique.
8. Explain side lying to sitting re-education.

SHORT NOTES

10 x 3 = 30 marks

9. Define Accessory movements
10. Define Vo2 max.
11. List the materials used in suspension therapy.
12. List the contraindications of PNF.
13. List the classification of active exercise.
14. List the merits of hydrotherapy.
15. List the uses of wheelchair.
16. Define True limb length discrepancy
17. List the tests for sensation.
18. List the muscle work in inclined prone kneeling.



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Research Methodology and Biostatistics

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Section - A

Research Methodology (40 marks)

QP Code: B3085

(Use Separate answer booklet for Section A & B)

I. LONG ESSAY

1X 10 = 10 Marks

1. Define Research. Explain objectives & Criteria of good Research.

II. SHORT ESSAY (Answer any Three)

3X 5 = 15 Marks

2. Explain in brief stages in data processing.
3. Classify study designs used in Research.
4. Explain Stratified Random Sampling Technique.
5. Explain role of Computer in Research.

III. SHORT ANSWER (Answer any Five)

5X 3 = 15 Marks

6. Mention 3 Random Sampling Methods.
7. Applied Research.
8. Hypothesis.
9. Sample Size.
10. Sources of Primary data.
11. FINER Criteria.

Section – B

Biostatistics (40 Marks)

QP Code: B3086

(Use separate answer booklet for section B)

I. LONG ESSAY

1X 10 = 10 Marks

1. Define central tendency. Calculate 3 important measures for the following data on pain scores 20, 23, 19 .66, 22, 70. Suggest the ideal measure of average for the data?

II.SHORT ESSAY (Answer any Three)

3X 5 = 15 Marks

2. Describe various scale of measurement with examples
3. Systematic random sampling
4. Non-probability sampling methods
5. Correlation

III. SHORT ANSWER (Answer any Five)

5X 3 = 15 Marks

6. Student t test
7. Histogram.
8. Standard deviation.
9. Arithmetic mean.
10. Null and Alternate hypothesis
11. Distinguish between primary and secondary data

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Section - A

Research Methodology (40 marks)

QP Code : B3335

(Use Separate answer booklet for Section A & B)

I. 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.

II. SHORT ESSAY

3 X 5= 15 Marks

2. Explain probability sampling with examples
3. List out the principles of ethics
4. Write a comprehensive note on the “Task of defining a research problem”.

III. 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)

I. LONG ESSAY

1 X 10 = 10 Marks

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

II.SHORT ESSAY

3 X 5 = 15 Marks

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

Class	2	4	5	6	3	4	2	4
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4. List the types of data and explain anyone.

III. 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