

[This question paper contains 4 printed pages.]

**Sr. No. of Question Paper : 6913**

**D**

**Your Roll No.....**

Unique Paper Code : 223355

Name of the Course : **B.Sc. (Prog.)**

Name of the Paper : LSPT-306 : Introduction to Medical Diagnostics

Semester : III

Time : 3 Hours

Maximum Marks : 75

**Instructions for Candidates**

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Answer **Five** questions in all.
3. Question No. 1 is compulsory.

1. (a) Define the following : (4)

- (i) Tubercle
- (ii) Osteoporosis
- (iii) Apoptosis
- (iv) Azoospermia

(b) Differentiate between the following : (10)

- (i) Paper Chromatography & Thin Layer Chromatography
- (ii) CT & MRI
- (iii) Hyperplasia & Metaplasia
- (iv) Alzheimer's and Parkinson's disease
- (v) Type I & Type II Diabetes

(c) Expand the following : (5)

- (i) ANOVA
- (ii) PCV

*P.T.O.*

- (iii) TSH
  - (iv) Rf
  - (v) DLC
- (d) Name the instruments for the diagnosis of the following parameters : (5)
- (i) Blood pressure
  - (ii) Counting of RBC
  - (iii) Fractured bone
  - (iv) Instant blood glucose estimation
  - (v) Abnormal heart beat
- (e) Indicate the normal range for the following in human beings : (3)
- (i) Serum Cholesterol
  - (ii) Normal Sperm Count
  - (iii) Clotting time
2. (a) Explain the cause, symptoms and management of malaria. (9)
- (b) List three National Health Programs addressing social and economic factors of diseases. (3)
3. (a) Illustrate the principle and applications of ion-exchange chromatography and Gas Chromatography. (9)
- (b) List the advantages of HPLC. (3)
4. (a) Write the differentiating features of Hepatitis virus with special emphasis on Hepatitis B. (9)
- (b) Write a short note on Down's syndrome. (3)
5. Write the principle and clinical significance of any **three** of the following :
- (a) WBC count

(b) ESR

(c) Haemoglobin estimation

(d) KFT

(4,4,4)

6. (a) Group A, B & C of dengue patients were subjected to treatment with a new drug. Following results were obtained for recovered patients :

A	B	C
3	6	7
4	3	3
3	3	4
5	4	6
0	4	5

Perform ANOVA to find any significant difference in treatment. (6)

(b) Calculate mean, mode and median of the given Hb. estimation results

10, 9, 9, 12, 8, 6, 7, 7, 7, 12. (3)

(c) Describe Chi-square test and discuss its application. (3)

7. (a) Write the details involved in Microtomy techniques. Comment on the advantages of fixation. (9)

(b) Add a note on culture techniques involved in Microbiology. (3)

8. Write short notes on any **three** of the following :

(i) Liver cirrhosis

(ii) ECG

(iii) UV-spectroscopy

(iv) ABO blood group

(4,4,4)

P.T.O.

Variance ratio,  $F$ , for  $p = 0.05$ 

Degrees of freedom, $n_2$	Degrees of freedom, $n_1$									
	1	2	3	4	5	6	8	12	24	$\infty$
1	161.4	199.5	215.7	224.6	230.0	234.0	238.9	243.9	249.0	254.3
2	18.5	19.0	19.2	19.3	19.3	19.3	19.4	19.4	19.5	19.5
3	10.1	9.6	9.3	9.1	9.0	8.9	8.8	8.7	8.6	8.5
4	7.7	6.9	6.6	6.4	6.3	6.2	6.0	5.9	5.8	5.6
5	6.6	5.8	5.4	5.2	5.1	5.0	4.8	4.7	4.5	4.4
6	6.0	5.1	4.8	4.5	4.4	4.3	4.2	4.0	3.8	3.7
7	5.6	4.7	4.4	4.1	4.0	3.9	3.7	3.6	3.4	3.2
8	5.3	4.5	4.1	3.8	3.7	3.6	3.4	3.3	3.1	2.9
9	5.1	4.3	3.9	3.6	3.5	3.4	3.2	3.1	2.9	2.7
10	5.0	4.1	3.7	3.5	3.3	3.2	3.1	2.9	2.7	2.5
11	4.8	4.0	3.6	3.4	3.2	3.1	3.0	2.8	2.6	2.4
12	4.8	3.9	3.5	3.3	3.1	3.0	2.9	2.7	2.5	2.3
13	4.7	3.8	3.4	3.2	3.0	2.9	2.8	2.6	2.5	2.2
14	4.6	3.7	3.3	3.1	3.0	2.9	2.7	2.5	2.4	2.1
15	4.5	3.7	3.3	3.1	2.9	2.8	2.6	2.5	2.3	2.1
16	4.5	3.6	3.2	3.0	2.9	2.7	2.6	2.4	2.2	2.0
17	4.5	3.6	3.2	3.0	2.8	2.7	2.6	2.4	2.2	2.0
18	4.4	3.6	3.2	2.9	2.8	2.7	2.5	2.3	2.2	1.9
19	4.4	3.5	3.1	2.9	2.7	2.6	2.5	2.3	2.1	1.9
20	4.4	3.5	3.1	2.9	2.7	2.6	2.5	2.3	2.1	1.8
21	4.3	3.5	3.1	2.8	2.7	2.6	2.4	2.3	2.1	1.8
22	4.3	3.4	3.1	2.8	2.7	2.6	2.4	2.2	2.0	1.8
23	4.3	3.4	3.0	2.8	2.6	2.5	2.4	2.2	2.0	1.8
24	4.3	3.4	3.0	2.8	2.6	2.5	2.4	2.2	2.0	1.7
25	4.2	3.4	3.0	2.8	2.6	2.5	2.3	2.2	2.0	1.7
26	4.2	3.4	3.0	2.7	2.6	2.5	2.3	2.2	2.0	1.7
27	4.2	3.4	3.0	2.7	2.6	2.5	2.3	2.1	1.9	1.7
28	4.2	3.3	3.0	2.7	2.6	2.4	2.3	2.1	1.9	1.7
29	4.2	3.3	2.9	2.7	2.5	2.4	2.3	2.1	1.9	1.6
30	4.2	3.3	2.9	2.7	2.5	2.4	2.3	2.1	1.9	1.6
40	4.1	3.2	2.8	2.6	2.5	2.3	2.2	2.0	1.8	1.5
60	4.0	3.2	2.8	2.5	2.4	2.3	2.1	1.9	1.7	1.4
120	3.9	3.1	2.7	2.5	2.3	2.2	2.0	1.8	1.6	1.3
$\infty$	3.8	3.0	2.6	2.4	2.2	2.1	1.9	1.8	1.5	1.0