

[This question paper contains 4 printed pages.]

Sr. No. of Question Paper : 8333

C

Roll No.....

Unique Paper Code : 223355

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

Name of the Course : B.Sc. (Prog.) / Life Science

Semester : III

Duration : 3 Hours

Maximum Marks : 75

(Write your Roll No. on the top immediately on receipt of this question paper.)

Note: Answer Five Questions only, including Question No. 1 which is Compulsory

1. (a) Define the following :

- (i) Electrocardiograph
- (ii) Hypertension
- (iii) Ketonuria
- (iv) Oligospermia
- (v) Leucopenia

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(b) Expand the following terms:

- (i) DOT
- (ii) NMR
- (iii) KFT
- (iv) MRI
- (v) DLC

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(c) Distinguish between the following:

- (i) Granulocytosis and Agranulocytosis.
- (ii) Diabetes mellitus and Diabetes insipidus.
- (iii) Affinity and Paper chromatography.
- (iv) Pulmonary tuberculosis and Extrapulmonary tuberculosis.
- (v) Bleeding time and Clotting time.

2x5

(d) Indicate the normal range for the following in human beings:

- (i) PCV
- (ii) Leucocytes
- (iii) Blood sugar
- (iv) Haemoglobin

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(e) Name any three Eradication programmes currently being undertaken by W. H. O.

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2. What is Down Syndrome ? Discuss the various causes, symptoms and management of Down syndrome.

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3. (a) Enlist the advantages of thin layer chromatograph

(b) Illustrate the principle and application of affinity chromatography.

(c) Describe the functioning of gel chromatography column for the separation of proteins.

3, 3, 6

P.T.O.

4. (a) What is the principle of ESR determination. Explain under which pathological conditions ESR is raised and reduced.
 (b) Describe the steps involved in preparing the tissue for microscopic examination. 9, 3
5. (a) Describe the causes and symptoms of various types of Hepatitis infection.
 (b) What are the differences between Benign and Malignant tumours. 6, 6
6. (a) Perform the t-test to compare the values recorded in control and experimental group. Calculate the means and standard error of means of the data provided.

S.No.	Control	Experimental
1	450	660
2	440	590
3	460	650
4	480	610
5	350	630
6	380	480
7	410	450
8	360	600
9	430	610
10	390	650

Refer to Table-1.

- (b) Perform the Chi-square analysis to statistically analyze the below mentioned data. Calculate the degree of freedom, and comment upon the null hypothesis for the provided data.

S.No.	Categories	Observed frequencies	Expected Frequencies
1	A	35	30
2	B	50	45
3	C	30	15
4	D	10	15
5	E	25	45

Refer to Table-2.

6, 6

7. (a) What are the advantages of MRI over CT.
 (b) State the significance of first and second heart sounds heard through Stethoscope.
 (c) Discuss the clinical significance of ABO Blood groups. 4, 4, 4
8. Write short notes on any three of the following:
 (a) Anaemia
 (b) Parkinson's disease
 (c) Cerebral malaria.
 (d) Type 2 Diabetes. 4, 4, 4

Table-1 for Q6 (a)

Degrees of Freedom	p=0.05	p=0.025	p=0.01	p=0.005
1	12.71	25.45	63.66	127.32
2	4.30	6.20	9.92	14.09
3	3.18	4.17	5.84	7.45
4	2.78	3.50	4.60	5.60
5	2.57	3.16	4.03	4.77
6	2.45	2.97	3.71	4.32
7	2.36	2.84	3.50	4.03
8	2.31	2.75	3.36	3.83
9	2.26	2.68	3.25	3.69
10	2.23	2.63	3.17	3.58
11	2.20	2.59	3.11	3.50
12	2.18	2.56	3.05	3.43
13	2.16	2.53	3.01	3.37
14	2.14	2.51	2.98	3.33
15	2.13	2.49	2.95	3.29
16	2.12	2.47	2.92	3.25
17	2.11	2.46	2.90	3.22
18	2.10	2.44	2.88	3.20
19	2.09	2.43	2.86	3.17
20	2.09	2.42	2.84	3.15
21	2.08	2.41	2.83	3.14
22	2.07	2.41	2.82	3.12
23	2.07	2.40	2.81	3.10
24	2.06	2.39	2.80	3.09
25	2.06	2.38	2.79	3.08
26	2.06	2.38	2.78	3.07
27	2.05	2.37	2.77	3.06
28	2.05	2.37	2.76	3.05
29	2.04	2.36	2.76	3.04
30	2.04	2.36	2.75	3.03
40	2.02	2.33	2.70	2.97
60	2.00	2.30	2.66	2.92
120	1.98	2.27	2.62	2.86
infinity	1.96	2.24	2.58	2.81

Table 2 for Q6 (b)

Percentage Points of the Chi-Square Distribution

Degrees of Freedom	Probability of a larger value of χ^2								
	0.99	0.95	0.90	0.75	0.50	0.25	0.10	0.05	0.01
1	0.000	0.004	0.016	0.102	0.455	1.32	2.71	3.84	6.63
2	0.020	0.103	0.211	0.575	1.386	2.77	4.61	5.99	9.21
3	0.115	0.352	0.584	1.212	2.366	4.11	6.25	7.81	11.34
4	0.297	0.711	1.064	1.923	3.357	5.39	7.78	9.49	13.28
5	0.554	1.145	1.610	2.675	4.351	6.63	9.24	11.07	15.09
6	0.872	1.635	2.204	3.455	5.348	7.84	10.64	12.59	16.81
7	1.239	2.167	2.833	4.255	6.346	9.04	12.02	14.07	18.48
8	1.647	2.733	3.490	5.071	7.344	10.22	13.36	15.51	20.09
9	2.088	3.325	4.168	5.899	8.343	11.39	14.68	16.92	21.67
10	2.558	3.940	4.865	6.737	9.342	12.55	15.99	18.31	23.21
11	3.053	4.575	5.578	7.584	10.341	13.70	17.28	19.68	24.72
12	3.571	5.226	6.304	8.438	11.340	14.85	18.55	21.03	26.22
13	4.107	5.892	7.042	9.299	12.340	15.98	19.81	22.36	27.69
14	4.660	6.571	7.790	10.165	13.339	17.12	21.06	23.68	29.14
15	5.229	7.261	8.547	11.037	14.339	18.25	22.31	25.00	30.58
16	5.812	7.962	9.312	11.912	15.338	19.37	23.54	26.30	32.00
17	6.408	8.672	10.085	12.792	16.338	20.49	24.77	27.59	33.41
18	7.015	9.390	10.865	13.675	17.338	21.60	25.99	28.87	34.80
19	7.633	10.117	11.651	14.562	18.338	22.72	27.20	30.14	36.19
20	8.260	10.851	12.443	15.452	19.337	23.83	28.41	31.41	37.57
22	9.542	12.338	14.041	17.240	21.337	26.04	30.81	33.92	40.29
24	10.856	13.848	15.659	19.037	23.337	28.24	33.20	36.42	42.98
26	12.198	15.379	17.292	20.843	25.336	30.43	35.56	38.89	45.64
28	13.565	16.928	18.939	22.657	27.336	32.62	37.92	41.34	48.28
30	14.953	18.493	20.599	24.478	29.336	34.80	40.26	43.77	50.89
40	22.164	26.509	29.051	33.660	39.335	45.62	51.80	55.76	63.69
50	27.707	34.764	37.689	42.942	49.335	56.33	63.17	67.50	76.15
60	37.485	43.188	46.459	52.294	59.335	66.98	74.40	79.08	88.38