M.Sc.

2015

2nd Semester Examination

BIOMEDICAL LABORATORY SCIENCE AND MANAGEMENT

PAPER—BLM-204

Full Marks : 40

Time : 2 Hours

The figures in the right-hand margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

Answer question *no. 1* and any *three* of the following.

1. Answer any *ten* questions of the following : 10×1

(a) Write one condition for Yate's correction.

(b) What is the focal theme of Ho hypothesis ?

(c) When you will follow two tail test for significance study ?

(d) Write an example of positive correlation from your discipline.

(e) Write an application of chi square test.

(f) What do you mean by 'data' ?

(g) What do you mean by dependent variable ?

(h) Write the full form of VLSIC.

(i) What do you mean by volatile memory ?

(j) What do you mean by 'Molal' solution ?

(k) What do you mean by 6N Hc*l* ?

(l) What is a programme language ?

(m) What do you mean by equivalent weight ?

(n) Distinguish between bit and byte.

(o) Write the names of any two output device of computer.

2. Systolic blood pressure (mm of Hg) of 9 individuals before exercise and after exercise given below. Find out whether or not the systolic blood pressure is significantly higher after exercise than before exercise :

Individuals :	1	2	3	4	5	6	7	8	9
Before exercise : S.P.(*mm. of Hg*)	110	112	108	116	104	120	106	122	118
After exercise : S.P.(*mm. of Hg*)	150	158	148	153	160	170	163	156	145

Critical Values of t : One tail : $-0.05(8) = 1{\cdot}860$

$0.01(8) = 2{\cdot}896$

two tail : $-0.05(8) = 2{\cdot}306$

$0.01(8) = 3{\cdot}355$ 10

3. (a) What do you mean by chi square test of independence ?

(b) Response to 50 normal humans and 60 diabetic humans to a biochemical test items gave positive and negative response as given below. Find out whether or not the test item differentiates significantly the diabetic humans from normal :

	Negative Response	*Positive response*
Normal	30	20
Diabetic	20	40

Critical χ^2 Values : $\chi^2_{0{\cdot}05(1)} = 3{\cdot}84$

$\chi^2_{0{\cdot}02(2)} = 5{\cdot}41$

$\chi^2_{0{\cdot}01(1)} = 6{\cdot}64$ 3+7

4. (a) Distinguish between system software and application software.

   (b) Explain the five basic operation performed by the computer. 5+5

5. (a) There are 20 gm NaCl in 400 ml of solution. What is its molarity ?

   (b) What would be the molecular concentration of the solution resulting from the mixing of 50 ml of 1 molar solution and 120 ml of 3 molar solution ? 4+6

6. (a) What will be the concentration resulting from mixing of 20 ml of 5% NaCl solution with 30 ml of 10% NaCl solution ?

   (b) 10 CC of 2% sugar solution was mixed with 15 cc of sugar solution of unknown concentration to produce 25 cc of 5% sugar solution. What was the concentration of 2nd solution ?

5+5