2012

M.Sc.

1st Semester Examination

HUMAN PHYSIOLOGY

PAPER—PHY-103

Full Marks : 40

Time : 2 Hours

The figures in the margin indicate full marks.

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

Illustrate the answers wherever necessary.

(Unit - 5)

Answer any *two* questions.

1. (a) What is Regression ? What is its significance ?

   (b) What is meant by dependent variable and independent variable ?

   (c) Workout the simple Linear regression equation (Y on X) for predicting body height scores (Y cm) from weight scores (X kg) using the following data from a sample of humans.

Individual No.	1	2	3	4	5	6	7	8	9	10
Height (cm)	161	166	181	159	170	183	155	170	163	142
Weight (kg)	52.5	54.0	65.0	47.5	60.0	68.0	45.0	60.0	55.0	42.0

(2+1)+(1+1)+5

2. (a) Apply one-way anova to find whether or not there is a significant difference between the heart rates (b/m) of the sedentary and trained male subjects.

Heart rate (b/m) :

Sedentary : 88, 70, 74, 71, 84, 72, 80, 81, 75, 80

Trained : 67, 72, 59, 61, 57, 68, 54, 70, 74, 68.

[Given $F_{0.05(1,18)} = 4.41$, $F_{0.01(1,18)} = 8.28$, $F_{0.05(2,18)} = 3.16$, $F_{0.01(2,18)} = 5.09$]

(b) What is multiple comparison test ? How do you perform multiple comparison 't' test ? 6+(1+3)

3. (a) How Mann-Whitney U test is worked out for small groups ?

(b) Mention the utility of this test.

(c) State the inaccuracies of Wilcoxon Rank Sum test. 6+2+2

4. Write short notes on : $(2\frac{1}{2} \times 4)$

(a) Computation of 'Chi square test of independence'.

(b) Characteristics of Pearson's product-moment r.

(c) Assumption of point biserial r.

(d) Computation of significance of second order partial r.

(Unit-6)

Answer any *two* questions.

1. (a) What do you mean by application program and utility program ?

(b) Distinguish between compiler and interpreter.

(c) What are MICR and OCR ?

(d) Write the principle of ink-jet printer.   2+3+2+3

2. (a) What is source program ? Is it different from obsect program ? Explain the relation between them.

(b) Explain Max function of MS Excel.

(c) What is structure programming ?   (2+2+2)+2+2

3. (a) Write a computer program to compute mean and SD of blood sugar level of 'n' number of persons.

   (b) Convert the binary equivalent of the decimal number 27.25.

   (c) Correct the errors, if any

      (i) 50 C= N$+P1

      (ii) 100 FOR J>1 To 6.2   5+3+2

4. (a) How do you insert symbol in a document of MS Word ?

   (b) How do you apply transition to the slides while using MS Power Point ?

   (c) What is URL ?

   (d) Write note on Fifth Generation Computer.

                               2+2+3+3