2011

M.Sc.

1st Semester Examination

HUMAN PHYSIOLOGY

PAPER—PHY-103

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.

Unit—05

Answer any *two* questions.

1. (a) Define Pearson's product-moment correlation coefficient. Mention two properties of it.

(b) How the significance of correlation coefficient is tested ?

(c) Differentiate correlation and partial correlation.

(d) Write down the formula for computation of first order partial correlation coefficient.

3+1+2+3+1

2. (a) What do you mean by one way anova and two way anova ?

(b) State the assumptions of Kuskal-Wallis non parametric anova.

(c) Workout the Kruskal-Wallis non-parametric anova with following grip strength (kg) data of two groups of subjects to find whether or not the grip strength values differ significantly.

Grip strength (kg) :

Gr I (Male) : 37 31 36 19 30 22 28 30 26

Gr II(Female) : 27 35 31 21 26 14 14 20 11 24 10

Critical X^2 values : $X^2_{05(1)} = 3.84$; $X^2_{0.01(1)} = 6.64$

$X^2_{0.05(2)} = 5.99$; $X^2_{0.0(2)} = 9.21$

2+2+6

3. (a) What is co-efficient of simple linear regression ? Write down its relationship with correlation coefficient.

(b) When 'Wilcoxon Signed Rank Test' is used in statistics ?

(c) In this test, how computation can be done for large samples ? (2+1)+2+5

4. (a) How biserial r differs from point biserial r ? State two assumptions of biserial r.

(b) Find out the binomial probability of random occurance

of 10 male rats in a sample of 15 rats drawn from a population having 52% males and 48% females ($\alpha = 0.05$) (2+2)+6

Unit—06

Answer any *two* questions.

1. (a) Write a program in BASIC to find highest and lowest value of body weight among N number of children.

(b) Correct errors if any, of the following

(i) 70 1E A ≥ B LET 50

(ii) 90 INPUT - A, B

(c) What is TAB function? 6+2+2

2. (a) What is hexa-decimal number system?

(b) Convert the following binary number into its hexadicimal equivalent $(11010110)_2 = (?)_{16}$

(c) Draw a flow chart to find the highest value of height among three persons.

(d) Add the following binary numbers – 10110 and 11101. 2+2+4+2

3. (a) State the functions ALU.

(b) How is EPROM more advantageous over PROM?

(c) How are data represented in CDROM and punched cards ?

(d) What is the difference between system and application software ? 2+2+4+2

4. (a) What do you mean by www ?

(b) What is search engine ? Give example.

(c) What do you understand by hypertext and hyperlink ?

(d) How do you insert a column and a row in a already existing table in a MS-word document. Write the steps for printing some specific pages of the MS-word document.

2+2+2(2+2)

———