2013

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 *all* questions.

1. (a) What do you mean by percentile?

(b) Compute the 80th percentile of the frequency distribution of PFI scores given in the following table : 1+4

PFI Scores :

Class interval	*Frequency*
46—50	4
51—55	7
56—60	12
61—65	25
66—70	13
71—75	6
76—80	3

Or

(a) What is bionomial probability distribution ?

(b) How will you compute it directly using binomial expansion ?

1+4

2. (a) What is correlation ? What is its coefficient ?

(b) Why is simple linear correlation called bivariate statistics ?

(c) Write down the relationship of $^{r}x_{y}$ and $^{b}x_{y}$.

$(1\frac{1}{2}+1\frac{1}{2})+1+1$

Or

In a population of 60 individuals determine the partial linear correlation coefficient between glomerular filtration rate (ml/min) and glomerular blood pressure (mm Hg) eliminating the effect of plasma protein osmotic pressure (mm Hg). Interpret your results.

$r_{12} = +0{\cdot}85$

$r_{13} = -0{\cdot}57$

$r_{23} = +0{\cdot}72$

Critical t scores :

$t_{0.10(56)} = 1{\cdot}673,\ t_{0.10(57)} = 1{\cdot}672$

$t_{0.05(56)} = 2{\cdot}003,\ t_{0.05(57)} = 2{\cdot}002$

$t_{0.01(56)} = 2{\cdot}667,\ t_{0.01(57)} = 2{\cdot}665$

$t_{0.001(56)} = 3{\cdot}473,\ t_{0.001(57)} = 3{\cdot}470$

5

3. (a) Explain the importance and compulation of Wilcoxon signed Rank test.

   (b) Discuss the limitations of the test. (1+2)+2

Or

   (a) How will you work out Wilcoxon composite rank test for large groups of equal size?

   (b) What are the inaccuracies of the test?

3+2

4. (a) Explain Model I anova.

   (b) Write the assumptions of anova. 2+3

Or

Apply Kruskal Wall is anova to compute H value of the performance scores of the following groups of students :

Group I : 10 17 19 16 18 12 15 13 19 11

Grope II : 19 22 24 23 27 18 25 20 29 31

5

Unit—06

1. State the difference between RAM and ROM. Mention the characteristics of different kinds of ROM. 2+3

Or

What do you mean by high level language? Discuss its advantages and disadvantages. What do you understand by symbolic language? 1+2+2

2. Write a computer program in BASIC to find the lowest value of blood sugar level among 10 persons. 5

Or

(a) Correct the error, if any, of the following :

(i) 100 IF P = 0·1 Go To 20

(ii) 20 FOR J = K, 5, 2

(b) Write the basic equivalent of the following :

$$x = \frac{a^2 - 4bc}{5k}$$

(c) What is DIM statement? 2+1+2

3. (a) How do you print the text in following cases using MS Word : (a) Current page (b) Pages 2 – 6.

(b) What is 'Undo' function of MS Word? 4+1

Or

What is URL? Write the steps for searching biological information of a given topic through internet. 2+3

4. (a) Mention the components of bioinformatics.

(b) State the role of bioinformatics in DNA sequence analysis and biodiversity. 1+4

Or

(a) Explain the following languages used in bioinformatics : (i) markup language ; (ii) scripting language.

(b) What is hyper text? 4+1