

[LB 1012]

OCTOBER 2012

Sub. Code: 4012

M.Sc (MEDICAL PHYSICS) DEGREE EXAMINATION
(Revised Regulations for Candidates admitted from 2010-2011)

FIRST YEAR

PAPER II – RADIOLOGICAL MATHEMATICS

Q.P. Code : 284012

Time : 3 hours
(180 Min)

Maximum : 100 marks

Answer ALL questions in the same order.

I. Elaborate on :

Pages Time Marks
(Max.)(Max.)(Max.)

1. a) Find is their significant difference between diabetic persons cholesterol value and non-diabetic persons cholesterol value. t-table value=2.26.

Diabetic group	160	162	165	186	185	175
Non diabetic group	144	148	140	140	152	141

- b) Discuss the conditions for applying student t-test.
2. a) A study revealed that among 90 males 15 were obese and among 60 females 20 were obese. Use chi square test to find whether sex and obesity are associated. ($\chi^2=3.84$ at 5% level)
- b) Discuss precautions for applying chi square distribution.

II. Write Notes on :

1. Discuss Correlation and regression. 4 10 6
2. Prepare the decay chart for cobalt-60 teletherapy isotope for the period of one half- life. 4 10 6
3. Discuss Euler's method and modified Euler's method. 4 10 6
4. Discuss linear graphs and nonlinear graphs. 4 10 6
5. Discuss Ranga-kutta method. 4 10 6
6. What are the properties of F-distribution. 4 10 6
7. Define i) Minimum detectable activity ii) uncertainty in the counting rate. 4 10 6
8. Discuss F- distribution. 4 10 6
9. Define signal to noise ratio. 4 10 6
10. Out of 800 families with 4 children each, how many families would be expected to have. 4 10 6
(1) 2 boys and 2 girls (2) no girl
