

**M.Sc. 3rd Semester Examination, 2019**

**ELECTRONICS**

*( History of Electromagnetic and Communication )*

*( Thoery )*

PAPER – ELC-304(CBCS)

*Full Marks : 50*

*Time : 2 hours*

**Answer all questions**

*The figures in the right hand margin indicate marks*

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

*Illustrate the answers wherever necessary*

**1. Answer any four questions : 2 × 4**

*(a) What is Telegraphy ?*

- (b) What is half duplex communication systems ?  
Give example.
- (c) What is romer ?
- (d) What is a page ?
- (e) What is Morse Code ?
- (f) Name the patented device of J.C. Bose.
- (g) What is Coheren ?
- (h) What is frequency spectrum ?

2. Answer any *four* questions : 4 × 4

- (a) Describe frequency reuse on frequency planning with reference to mobile communication. 4
- (b) Describe trunking system and Grade of Service (GoS). 4
- (c) Define : 4
  - (i) Set up time
  - (ii) Holding time.with reference to mobile communication.

(d) A spectrum of 30 MHz is allocated to a wireless FDD cellular system which uses 25 kHz simplex channels to provide full duplex voice and control channels, compute the number of channels available per cell if a system uses.

(i) Four cell reuser

(ii) Seven cell reuser

Consider 1 MHz of the allocated spectrum is dedicated to control channel.

4

(e) What is Berlin Prize ?

4

(f) Who is Maxwell ? How did he contribute to wireless communication ?

1 + 3

(g) Write short note on "Henric Hertz".

4

(h) Describe the device coherer. What is auto coherer ?

4

3. Answer any *two* questions :

8 × 2

(a) What is Hands off ? Describe the process of Hands off.

3 + 5

- (b) Write down briefly about the scandal over Italian Navy Coherer as described by V.J. PHILIPS and P.K. Banerjee. 8
- (c) Who is Luigui Galvani ? Write briefly about his experiment on animal electricity. 2 + 6
- (d) Write briefly about the experiment on wireless communication of J.C. Bose. 8

[*Internal Assessment*—10 Marks ]