Reg. No.										

INTERNATIONAL CENTRE FOR APPLIED SCIENCES

(Manipal University)

II SEMESTER B.S. DEGREE EXAMINATION – NOV. / DEC. 2016

SUBJECT: HUMAN FACTORS IN ENGINEERING & DESIGN (HS 121)

(BRANCH: EC, EE, MECH, AVI & IP)

Wednesday, 14 December 2016

Time: 3 Hours **Max. Marks: 100**

✓ **Answer ANY FIVE full Questions.**

1A Expand the following acronyms.
a. ILO b) OSHA c) IEA d) WHO

1B Answer the following very briefly.
1. What is Firmware?
2. What proprioceptors?
3. What is bandwidth?
4. What are Rods?
5. What is Visual acuity?
6. What is JND?
7. Define work efficiency?
8. What is Control Response Ratio?

1C List out and discuss the different applications of human factors. **(4+8+10)**

2A Explain elements of Man- Machine Interaction.
2B Compare and contrast man and machine capabilities.
2C What are the general steps in systems approach? **(6+8+6)**

3A What are the steps involved in human resources planning?
3B Explain the different stages of information processing with neat illustration?
3C Explain different resources of attention. **(6+8+6)**

4A List out different visual capabilities and explain three of them with relative examples.
4B What are different types of quantitative scales?
4C Explain when auditory displays are used/not used with examples. **(8+6+6)**

5A Explain the factors effecting the energy expenditure?
5B List out different ranges of body motions and explain any two of them with neat illustrations.
5C List different of types of controls and explain any two of them with relevant examples. **(6+8+6)**

6A List out the factors effecting design of control and explain any two of them.
6B List out primary uses of Anthropometric data and explain any of three applications. with relevant examples.
6C Briefly explain the principles of applications of Anthropometric data. **(6+8+6)**

7A Explain work space dimensions.
7B Explain a horizontal workspace area with help of a neat illustration.
7C Discuss the implications of work space heights for different working situations. **(8+6+6)**

8A List out principles of seat design and explain any three of them.
8B List out the guidelines and explain two of them.
8C What are the principles followed in arranging components and explain location of foot controls? **(8+6+6)**