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INTERNATIONAL CENTRE FOR APPLIED SCIENCES

(Manipal University)

II SEMESTER B.S. (ENGG.) DEGREE EXAMINATION-APRIL/MAY 2017

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

(BRANCH: EE, EC & MECH)

Wednesday, 3 May 2017

Time: 03 Hours

Max. Marks: 100

- ✓ Answer ANY FIVE full Questions.
- ✓ Missing data, if any, may be suitably assumed.
- ✓ Neat sketches should accompany wherever necessary.

- 1 A. List the types or classes of systems. Explain any two class of system with suitable example.
1 B. What is the role of HF researcher?
1 C. What is Anthropometry? What are the uses of Anthropometry data? [6+6+8]
- 2 A. Explain the costs of neglecting Ergonomics.
2 B. Explain with block diagram how man-machine environment interact.
2 C. Explain the assumption of Ergonomics. [6+8+6]
- 3 A. Explain illumination? How does it influence human performance? Write examples.
3 B. Explain biomechanics. Which is best posture to lift a weight of 75 Kgs?
3 C. Explain the precautions to be taken to avoid vibration. [8+6+6]
- 4 A. Explain with sketch the different features of human eye.
4 B. Explain different types of auditory displays.
4 C. Define Information Theory. Enumerate the different types of information. [8+6+6]
- 5 A. Explain the principal of seat design.
5 B. Explain the principal of arranging components.
5 C. Explain the effect of glare on the quality of light. [8+6+6]
- 6 A. Explain the concept work-rest cycles.
6 B. Explain any TWO with the help of illustration of body movements
i) Flexion ii) Adduction iii) Supination
6 C. Explain the factors influencing the design of controls. [6+8+6]
- 7 A. What are the factors to be considered during the seat design features.
7 B. Explain the Purkinje shift.
7 C. Describe the feature of foot control. [8+4+8]
- 8 A. Sketch and explain the different types of Quantitative visual displays. Discussion the expected and unexpected designs of displays.
8 B. Compare the salient features of Camera with that of Human Eye.
8 C. Write a short notes on 'Visual Capabilities'. [6+8+6]

