

2021

PHYSIOLOGY — HONOURS

Paper : DSE-A-3

(Ergonomics)

Full Marks : 50

The figures in the margin indicate full marks.

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

Group - A

1. Answer **any five** questions of the following : 2×5
- (a) What is dynamic anthropometry?
 - (b) What do you mean by display and control?
 - (c) What is Carpal Tunnel Syndrome?
 - (d) State the significance of Globe Thermometer in the assessment of thermal load.
 - (e) Name the device and the unit used to measure the illumination level of an area.
 - (f) What do you mean by Lumber Lordosis and Lumber Kyphosis?
 - (g) What are muscle agonists? Give example.
 - (h) What is Tennis elbow?

Group - B

2. Answer **any two** questions of the following : 5×2
- (a) Discuss in brief the OWAS method of work posture analysis.
 - (b) What is manual material handling (MMH)? Mention the different categories of movement in MMH.
 - (c) What are workplace stressors? How can they be mitigated by the application of ergonomic principles?
 - (d) Discuss about the multidisciplinary approach of Ergonomics.
 - (e) Discuss the basic principles of designing a standing workstation.

Group - C

3. Answer **any three** questions from the following :
- (a) (i) Discuss the application of ergonomics in the improvement of work efficiencies of industrial workers.
 - (ii) How can the concept of anthropometry be applied in machine design in industry? 5+5

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- (b) (i) What are musculoskeletal disorders (MSDs)? Enumerate the risk factors of MSDs.
(ii) Elucidate the different types of MSDs. (2+3)+5
- (c) Discuss the role of ergonomics in the improvement of workstation for a worker exposed to :
(i) an extremely exhausting thermal environment and
(ii) a high noise level. 5+5
- (d) (i) What do you mean by human computer interface?
(ii) Discuss the ergonomic modifications necessary for the people working in the visual display terminals. 3+7
- (e) (i) What is WBGT index? How can WBGT Index be measured in both indoor and outdoor?
(ii) What do you mean by heat exhaustion?
(iii) Discuss about the basic steps of heat stress management. (1+4)+2+3
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