



Avinashilingam Institute for Home Science and Higher Education for Women
(Deemed to be University under Category 'A' by MHRD, Estd. u/s 3 of UGC Act 1956)
Re-accredited with 'A+' Grade by NAAC. Recognised by UGC Under Section 12B
Coimbatore - 641 043, Tamil Nadu, India

Bachelor's Degree Examination – January 2021
V Semester

Class : III UG
Major : Interior Design and Resource Management

Time : 3 Hours
Max. Marks: 100

18BIDC16 Principles of Ergonomics

PART A

10 x 1 = 10

Choose the Correct Answer

1. Ergonomics improves
 - a. Risk
 - b. Productivity
 - c. Injuries
 - d. Hazards
2. Identify a term not related to Ergonomics
 - a. Fatigue
 - b. biomimic
 - c. anthropometry
 - d. biomechanics
3. Expand MSD in ergonomics.
 - a. Mood stress disorder
 - b. Musculo-skeletal disorder
 - c. Musculo-stress disorder
 - d. Mood-skeletal disorder
4. Anthropometry is the branch of human science that studies the _____ aspect of human body.
 - a. Psychological
 - b. Mental
 - c. Physical
 - d. Moral
5. This refers to muscular contraction in the length of the muscle which doesn't change.
 - a. Isometric
 - b. Isotonic
 - c. Eccentric
 - d. Concentric
6. Good _____ posture will reduce the health injuries.
 - a. Erect
 - b. inclined
 - c. Crooked
 - d. Dynamic and static
7. Poor _____ can affect the quality of work performance.
 - a. Body temperature
 - b. Lighting
 - c. Thermal discomfort
 - d. Vibration
8. Noise-induced hearing loss is caused by exposure to
 - a. Loud noise
 - b. Miscellaneous noise
 - c. Low-frequency noise
 - d. Intermittent noise
9. Application of ergonomic considerations in workstation will decrease
 - a. Comfort
 - b. Productivity
 - c. Fatigue
 - d. Body metabolism
10. What stands for 'W' in WMSD?
 - a. Workplace - related
 - b. Worker - related
 - c. Worker environment
 - d. Work- related

Part B

5 x 6 = 30

Answer ALL questions

Each answer should not exceed 400 words or two pages

- 11.a. What is the role of an ergonomist in considering the safety measures of a worker?
(or)
- 11.b. What are the Health benefits of ergonomics?
- 12.a. Discuss the significance of applying work physiology in ergonomics.
(or)
- 12.b. Write short notes on tendons, joints and ligaments.
- 13.a. Define 'biomechanics'. Analyse work postures and their relationship to colour cost of various activities.
(or)
- 13.b. Explain how muscular fatigue can affect the productivity of the worker.
- 14.a. Differentiate comfort and discomfort during work performance with suitable examples.
(or)
- 14.b. Describe the effects of glare and shadow on vision.
- 15.a. Draw vertical and horizontal arm reach of a home maker in kitchen work environment.
(or)
- 15.b. Differentiate presbycusis and presbyopia. Explain how and why they are caused.

Part C

5 x 12 = 60

Answer ALL questions

Each answer should not exceed 800 words or four pages

- 16.a. Define Ergonomics. Comment on the concept of Man-machine systems in enhancing human capabilities and productivity?
(or)
- 16.b. Elaborate the term 'Fitting the job to the person and the person to the job' in ergonomics.
- 17.a. Give a detailed note on static and dynamic anthropometry.
(or)
- 17.b. Explain with illustration the types of dimensions in anthropometrics of workplace.
- 18.a. Categorise the factors affecting energy requirement of worker in workplace.
(or)
- 18.b. Elaborate in detail the types of muscular work in any work environment with proper examples.
- 19.a. Classify safety principles required in designing light at workplace.
(or)
- 19.b. Enumerate how the physical factors of the work environment can affect productivity of a worker?
- 20.a. Explain the concept of Humanising design? How can it be successfully implemented to ensure worker safety?
(or)
- 20.b. Expand OSHA. Justify how occupational safety reduce msp in workplace.
