Online Ergonomics – Session 1 Homework Worksheets

Session One Overview Questions (Answers)

1. The Ergonomics Risk Screen examines three primary ergonomics factors (check all that apply):
   - ☑ Posture
   - ☐ Contact Stress (sharp edge and hard surface)
   - ☑ Force
   - ☐ Workforce training
   - ☑ Repetition (Duration and Frequency)
2. Interpretation of the Relative Risk Index indicates (check all that apply):
   - ☐ A score of 0 to 1 indicates for sure there is no risk for a musculoskeletal disorder (MSD) A
   - ☑ score of 0 to 1 indicates there is minimal risk for an MSD but does not eliminate it entirely
   - ☐ A score of 4 or more indicates for sure an MSD will occur
   - ☑ A score of 4 indicates the relative risk of an MSD is higher than a score of 1
3. Ergonomics can be defined as (check all that apply):
   - ☐ Working harder, not smarter
   - ☐ Fit the person to job, don't force the job to fit the person
   - ☑ Optimizing job performance through appropriate workstation, tool and equipment
   - ☐ design Depending on workers to work safely when they are working in poor postures
4. Physiological changes occur as a matter of aging (check all that apply):
   - ☑ Strength and flexibility may significantly decrease
   - ☐ Aerobic capacity and endurance typically increase
   - ☐ Visual acuity typically improves with aging
   - ☑ Reflexes and hand-eye coordination may deteriorate
   - ☑ Work expertise associated with work experience is enhanced
5. Effective work process design principles include (check all that apply):
   - ☑ Make it visually apparent what the control on a piece of equipment does
   - ☐ Previous experience in performing a task has no influence on future performance
   - ☑ Make clear relationships between controls, their movements, and results in the real world
   - ☑ Return information to the user regarding the outcome of user actions
6. Benefits of neutral spine position include (check all that apply):
   - ☐ Increased biomechanical stress into the spine and extremities
   - ☑ Increased respiratory function
   - ☑ Improved joint range of motion
   - ☑ Decreased biomechanical stress into the spine and extremities
7. Based on the length tension relationship of skeletal muscle (check all that apply):
   - ☐ Greatest muscle force can be generated with the elbow fully flexed (bent)
   - ☐ Wrist position flexed to 45 degrees allows for greater force production than mid-range of wrist position
   - ☑ Forward bending of the back to 30 degrees results in more intradiscal pressure than a neutral upright, spine position
   - ☐ The hand is able to generate a greater power grip when the wrist is in 25 degrees of extension compared to 5 degrees of extension

8. The LNI Lifting Calculator considers the following factors (check all that apply):
   - ☐ Gender of the person performing the lift
   - ☑ Actual object weight
   - ☑ How far from the body the object is being handled
   - ☐ Stature of the person performing the lift
   - ☑ How many times/minute the lift is being performed
   - ☑ How many hours/day the lift is being performed
9. Comfort Reach Zone is defined as (check all that apply):
   - ☑ Area in front and to the side of body where hands are used when doing precise hand activity
   - ☐ Area in front and to the side of body at arm's length to obtain parts and materials
   - ☑ Forearm length determines the dimensions of the Comfort Reach Zone
   - ☐ Arm length (tip of shoulder to middle of the hand) determines the dimensions of the Comfort Reach Zone
10. Anthropometric principles can be applied in ergonomics to (check all that apply):
   - ☑ Design standards
   - ☑ Reaches/heights
   - ☑ Handle configuration
   - ☑ General work station design
   - ☑ Development of biomechanical models