

**APPENDIX A**

1. WSIB is a government regulated system that reports to the MOL T or F
2. OSHA is Ontario's Act to control safety in the province T or F
3. Grandjean (1988) states that ergonomics is fitting the worker to the job T or F
4. Latent could be defined as referring to a long term effect T or F
5. Severity is a term used in epidemiology and physiology T or F
6. A Chatillon Gauge can measure push and pull forces T or F
7. A Task Analysis measures the physical requirements of the job T or F
8. The PDA is often required when accommodating an employee T or F
9. A goniometer is designed to measure force T or F
10. An FAE is often used to determine whether a person is fit for work T or F
11. Repetitive use of a single body part can lead to:
  - a. Decreased blood flow to the area
  - b. Increased friction
  - c. Inflammation
  - d. b and c
  - e. a, b and c
12. A Canadian statistic that states direct costs are \$800 million, 1987 is an example of:
  - a. Severity
  - b. Prevalence
  - c. Incidence
  - d. I have not got a clue?
13. Low back pain accounts for 33% of all compensation claims, 1991 is an example of:
  - a. Severity
  - b. Prevalence
  - c. Incidence
  - d. I have not got a clue?
14. A dimensionless unit representing a proportion of a population that is experiencing a particular disorder at a specified point in time is defined as:
  - a. Severity

- b. Prevalence
- c. Incidence
- d. I have not got a clue?

15. Force units could be written as:

- a.  $\text{Kgm/s}^2$
- b. Newtons
- c.  $\text{Kg/s}^2$
- d. I used to know this last year
- e. a and b
- f. b and c

**APPENDIX B**

1. Task, Worker, Workstation, Procedure, Environment are all examples of the Human – Machine Interface T or F
2. A squat lift is safer on the shoulders than a stooped lift T or F
3. Units in Nm could be the result of a Moment calculation T or F
4. Decreasing distance of a load from a human decreases support Moment requirements T or F
5. A piano being lifted up a 45 degree slope by two humans will primarily affect the person on the lower end because the center of gravity shifts toward the lowest point in the carry T or F
6. Increasing muscle strength can improve tissue tolerance by:
  - a. Increasing the number of actin and myosin fibres
  - b. Increasing capillarization
  - c. Increasing available ATP
  - d. two of the above
  - e. all of the above
7. Ergonomic studies of risk factors identified these as the top three
  - a. Force, repetition and posture
  - b. Vibration repetition and force
  - c. Posture, repetition and vibration
  - d. Force, awkward posture, repetition
8. Tissue demands that result in crossing the tissue tolerance curve over an extended time period is referred to as:
  - a. Cumulative trauma
  - b. Acute trauma
  - c. Obscure trauma
  - d. None of the above
9. A first degree CTD is worse than a third degree CTD T or F
10. Nocturnal waking could be a sign of median nerve damage T or F

11. An objective prescreening test includes:

- a. MRI
- b. Xray
- c. Palpation Of The Affected Area
- d. Survey
- e. Two Of The Above
- f. Three Of The Above
- g. All Of The Above

12. If a repetitive assembly job using arms and requiring wrist supination and pronation is required to be prescreened the best way to identify potential risk to the candidate is to:

- a. Assess using job specific testing
- b. Assess using a survey
- c. Assess using repetitive pronation/supination tests
- d. Assess using references

13. You are asked to prescreen for the likelihood of a new line causing low back injury. The best assessment choice(s) from the tools below is/are:

- a. NIOSH
- b. RULA
- c. Chatillon Gauge
- d. SNOOK
- e. Two Of The Above
- f. Three Of the Above
- g. All Of the Above

14. Prescreening is a useful ergonomic technique in identifying potential or actual health and safety issues with:

- a. Employees
- b. New Jobs
- c. Proposed Jobs
- d. b and c
- e. a, b and c

15. Questioning an employee about past injuries is an example of:

- a. Objective prescreening
- b. Subjective prescreening
- c. a and b
- d. I have not got a clue?

**APPENDIX C**

1. Investigations of facility air quality rarely identify harmful levels of toxic substances T or F
2. The major source of pollutant pathway in an office setting is HVAC T or F
3. An asphyxiant displaces oxygen but is not necessarily toxic T or F
4. Dust is considered a particulate T or F
5. Hygiene tests are conducted to determine human compatibility with environmental ergonomics T or F
6. Symptoms of SBS can be:
  - a. Headache and fatigue
  - b. Nausea and dizziness
  - c. Upper respiratory irritation
  - d. two of the above
  - e. all of the above
7. According to Byrd (1997) infectious, toxic or irritating substances are present in the air
  - a. Occasionally
  - b. Rarely
  - c. Always
  - d. Never
8. The most common route of entry of contaminants is due to:
  - a. Absorption
  - b. Inhalation
  - c. Ingestion
  - d. Two of the above
  - e. Three of the above
9. If CO<sub>2</sub> is used as an indicator substance it can demonstrate:
  - a. That a problem exists with air circulation
  - b. That the building is well ventilated
  - c. That air balancing is necessary
  - d. Two of the above
  - e. Three of the above



10. Ergonomic assessment of industrial hygiene is important because:

- a. Employee health is affected
- b. Productivity is affected
- c. Legislation demands compliance
- d. Two of the above
- e. Three of the above

11. The symbol on the right indicates:

- a. a bald man's hair is on fire
- b. Don King owns the product
- c. The material is capable of oxidizing
- d. None of the above



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- a. a bald man's hair is on fire
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- d. None of the above



13. The symbols in questions 11 and 12 indicate:

- a. Students will have a mix and match component on the midterm
- b. All of the above

14. Material Safety Data Sheets are a great way to:

- a. Tuck yourself in at night
- b. Learn about first aid measures
- c. Learn more about the chemicals in a facility
- d. Identify potential environmental ergonomic issues in a facility
- e. Three of the above
- f. All of the above

15. Eating in the production area of a workplace can result in:

- a. Ingestion of toxic chemicals
- b. Dropping of food into product
- c. Encourage microbial contamination
- d. Is a symptom of poor ergonomic controls
- e. All of the above

**APPENDIX D**

1. Mass multiplied by Gravity calculates Force T or F
2. Newtons could be expressed in:
- a.  $\text{kg/m}^3$
  - b.  $\text{m/s}^2$
  - c.  $\text{kgm/s}^2$
  - d.  $\text{grams/m}^3$
3. When calculating the Support Moment (Ms) one should consider the weight of the body as well as the weight of the load T or F
4. A forward bend at the waist of 45 degrees requires a higher support moment at the back than a 30 degree forward bend T or F
5. When evaluating repetition, the ergonomist should consider:
- a. Timing
  - b. Body Part
  - c. Type Of Repetition
  - d. Two of the above
  - e. All of the above
6. If TWAEV exceeds ACGIH TLV recommendations it means:
- a. You will die
  - b. Levels are in excess of what is thought to be safe for humans
  - c. Legislation is violated
  - d. two of the above
  - e. all of the above
7. If a gas displaces oxygen it is known as:
- a. Asphyxiant
  - b. Toxin
  - c. Pathogen
  - d. Oxidizatorizerer
8. The best way to prevent Heat Stress is to ensure:
- a. Water or liquid replacement is available
  - b. Breaks are more frequent
  - c. Scheduling for production during evening and morning
  - d. Two of the above
  - e. Three of the above

9. The MSDS can demonstrate:
- a. That a carcinogen is being used
  - b. The first aid required if a human is exposed
  - c. The telephone number of the manufacturer
  - d. Two of the above
  - e. Three of the above
10. Ergonomic assessment of industrial hygiene is important because:
- a. Employee health is affected
  - b. Productivity is affected
  - c. Legislation demands compliance
  - d. Two of the above
  - e. Three of the above
11. Prolonged static work can result in:
- a. nerve damage
  - b. improved blood flow
  - c. tendinitis
  - d. Two of the above
  - e. Three of the above
12. Pre-existing conditions are important to the ergonomist because:
- a. Accommodation does not have to be considered
  - b. Workstations and productivity could be affected
  - c. Allergies can be a factor determining employment
  - d. Two of the above
  - e. Three of the above
13. The ergonomist needs to consider the energy cost of work because:
- a. Illness and death can be prevented
  - b. Improved working conditions can be evaluated
  - c. Metabolic rates are different between humans
  - d. All of the above
14. According to Grandjean (1988) and Mital (1991) digestive challenges, giddiness and distaste for work could be symptoms of:
- a. Poor cafeteria food
  - b. First aid measures are not working
  - c. Fatigue may be present
  - d. Potential ergonomic issues in a facility
  - e. Two of the above
  - f. Three of the above

DDD is not present in most humans until they reach age 40

T or F

## Appendix A-D Answers

#### Appendix A Answer Guide

1. T
2. F
3. F
4. T
5. T
6. T
7. F
8. T
9. F
10. T
11. E
12. A
13. C
14. B
15. E

#### Appendix B Answer Guide

1. T
2. F
3. T
4. T
5. T
6. D (B & C)
7. D
8. A
9. F
10. T
11. E
12. A
13. E (A & D)
14. E
15. B

### Appendix C Answer Guide

1. T
2. T
3. T
4. T
5. T
6. E
7. C
8. B
9. E
10. E
11. C
12. C
13. A
14. E
15. E

### Appendix D Answer Guide

1. T
2. C
3. T
4. T
5. E
6. D
7. A
8. E
9. E
10. E
11. D (A & C)
12. D (B & C)
13. D
14. E (C & D)
15. F