



**Review Questions**

1. A tolerance is which one of the following: (a) clearance between a shaft and a mating hole, (b) measurement error, (c) total permissible variation from a specified dimension, or (d) variation in manufacturing?

**1. Answer. (c).**

2. Which of the following two geometric terms have the same meaning: (a) circularity, (b) concentricity, (c) cylindricity, and (d) roundness?

**2. Answer. (a) and (d).**

3. Surface texture includes which of the following characteristics of a surface (three correct answers): (a) deviations from the nominal surface, (b) feed marks of the tool that produced the surface, (c) hardness variations, (d) oil films, and (e) surface cracks?

**3. Answer. (a), (b), and (e).**

4. Which averaging method generally yields the higher value of surface roughness: (a) AA or (b) RMS?

**4. Answer. (b).**

5. Surface texture is included within the scope of surface integrity: (a) true or (b) false?

**5. Answer. (a).**

6. Which one of the following manufacturing processes will likely result in the best surface finish: (a) arc welding, (b) grinding, (c) machining, (d) sand casting, or (e) sawing?

**6. Answer. (b).**

7. Which one of the following manufacturing processes will likely result in the worst surface finish: (a) cold rolling, (b) grinding, (c) machining, (d) sand casting, or (e) sawing?

**7. Answer. (d) and (e).**

8. An outside micrometer would be appropriate for measuring which of the following (two correct answers): (a) hole depth, (b) hole diameter, (c) part length, (d) shaft diameter, and (e) surface roughness?

**8. Answer. (c) and (d).**

9. Which of the following are attributes of the “metric system” of linear measurement (two correct answers): (a) based on astronomical distances, (b) defined in terms of the human body, (c) originated in Great Britain, (d) rational prefixes for units, and (e) units are subdivided decimally?

9. Answer. (d) and (e).

10. Which one of the following materials has the highest hardness: (a) diamond (b) aluminum, (c) steel, (d) titanium, or (e) tungsten?

10. Answer. (a).