**Manufacturing Processes - AMEM 201**

- Review Questions -

2\(^{nd}\) Group of Review Questions

1. The maximum possible draft in a rolling operation depends on which of the following parameters (two correct answers): (a) coefficient of friction between roll and work, (b) roll diameter, (c) roll velocity, (d) stock thickness, (e) strain, and (f) strength coefficient of the work metal?

1. **Answer. (a), and (b).**

2. Which of the following rolling mill types are associated with relatively small diameter rolls in contact with the work (two correct answers): (a) cluster mill, (b) continuous rolling mill, (c) four-high mill, (d) reversing mill, and (e) three-high configuration?

2. **Answer. (a), and (c).**

3. Flash in impression die forging serves no useful purpose and is undesirable because it must be trimmed from the part after forming: (a) true or (b) false?

3. **Answer. (b).** Flash causes build-up of pressure inside the die, which forces the work metal to fill the die cavity.

4. In which of the following extrusion operation is friction a factor in determining the extrusion force (one best answer): (a) direct extrusion or (b) indirect extrusion?

4. **Answer. (a).**

5. Johnson's formula is associated with which one of the four bulk deformation processes: (a) bar and wire drawing, (b) extrusion, (c) forging, and (d) rolling?

5. **Answer. (b).**

6. Most sheet metalworking operations are performed as which of the following: (a) cold working, (b) hot working, or (c) warm working?

6. **Answer. (a).**
7. In a sheet metal cutting operation used to produce a flat part with a hole in the center, the part itself is called a blank, and the scrap piece that was cut out to make the hole is called a slug: (a) true or (b) false?

7. Answer. (a).

8. As sheet metal stock hardness increases in a blanking operation, the clearance between punch and die should be which of the following: (a) decreased, (b) increased, or (c) remain the same?

8. Answer. (b).

9. A circular sheet metal slug produced in a hole punching operation will have the same diameter as which of the following: (a) the die opening or (b) the punch?


10. The cutting force in a sheet metal blanking operation depends on which mechanical property of the metal (one correct answer): (a) compressive strength, (b) modulus of elasticity, (c) shear strength, (d) strain rate, (e) tensile strength, or (f) yield strength?

10. Answer. (d).

11. Which of the following descriptions applies to a V-bending operation as compared to an edge bending operation (two best answers): (a) costly tooling, (b) inexpensive tooling, (c) limited to 90° bends or less, (d) used for high production, (e) used for low production, and (f) uses a pressure pad to hold down the sheet metal?

11. Answer. (b) and (e).

12. Sheet metal bending involves which of the following stresses and strains (two correct answers): (a) compressive, (b) shear, and (c) tensile?

12. Answer. (a) and (c).

13. The following are measures of feasibility for several proposed cup drawing operations; which of the operations are likely to be feasible (three best answers: (a) DR = 1.7, (b) DR = 2.7, (c) r = 0.35, (d) r = 0.65, and (e) t/D = 2%?

13. Answer. (a), (c), and (e).
14. Of the following cutting conditions, which one has the greatest effect on tool wear: (a) cutting speed, (b) depth of cut, or (c) feed?

**14. Answer. (a).**

15. Which of the following are the two main functions of a cutting fluid in machining (two best answers): (a) improve surface finish on the workpiece, (b) reduce forces and power, (c) reduce friction at the tool-chip interface, (d) remove heat from the process, and (e) wash away chips?

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

16. Reaming is used for which of the following functions (three correct answers): (a) accurately locate a hole position, (b) enlarge a drilled hole, (c) improve surface finish on a hole, (d) improve tolerance on hole diameter, and (e) provide an internal thread?

**16. Answer. (b), (c), and (d).**

17. A broaching operation is best described by which one of the following: (a) a rotating tool moves past a stationary workpart, (b) a tool with multiple teeth moves linearly past a stationary workpart, (c) a workpart is fed past a rotating cutting tool, or (d) a workpart moves linearly past a stationary single point tool?

**17. Answer. (b).**