## **ASVAB Mechanical Practice Test**



**1. The diagram shows five gears. If gear B turns as shown, then the gears turning in the same direction are**

* A. A and C.
* B. A and D.
* C. C and D.
* D. D and E.

**2. What is the theoretical mechanical advantage in using this lever?**



* A. 1
* B. 2
* C. 3
* D. 4

**3. A wrench is used to turn a bolt that has 20 threads per inch. After 15 complete turns of the wrench, the bolt will have moved**

* A. 1⁄4 inch.
* B. 1⁄2 inch.
* C. 3⁄4 inch.
* D. 1 inch.

**4. A gear and pinion have a ratio of 5 to 1. If the gear is rotating at a speed of 150 revolutions per minute (rpm), the speed of the pinion is most nearly**

* A. 750 rpm.
* B. 300 rpm.
* C. 150 rpm.
* D. 30 rpm.

**5. In the diagram, water is flowing from left to right. What is true of the water after it enters the 3-inch pipe?**



* A. Its pressure decreases, but its speed increases.
* B. Its pressure and speed both decrease.
* C. Its pressure and speed both increase.
* D. Its pressure increases, but its speed decreases.

**6. What is the force**F**needed to balance this lever?**



* A. 20 kg
* B. 22 kg
* C. 25 kg
* D. 30 kg

**7. Gear A, with 48 teeth, meshes with gear B, with 12 teeth. For every rotation that gear A makes, how many rotations does gear B make?**

* A. 1
* B. 2
* C. 4
* D. 8

**8. Pushing a heavy concrete block up an inclined plane will be easier if you**

* A. raise the angle of the plane.
* B. turn the block upside down.
* C. heat the block with an electric coil.
* D. put the block on a wheelbarrow.

**9. These pipes and cylinders are part of a hydraulic mechanism. If the piston in cylinder A moves,**



* A. the piston in cylinder B will move.
* B. the fluid in cylinder A will not move.
* C. the piston in cylinder B will not move.
* D. the fluid in cylinder A will move, but the fluid in cylinder B will not move.

**10. A 3 ft × 6 ft tank is filled with 3,600 lb of water. What is the pressure on the bottom, in lb/ft2?**

* A. 100
* B. 200
* C. 400
* D. 800

**11. Which cannot bend without breaking?**



**12. A knife blade is an example of which kind of simple machine?**

* A. Pulley
* B. Wheel and axle
* C. Inclined plane
* D. Gear

**13. In the pulley (sheave) system shown, pulley 1 is rotating at 80 rpm. How fast is pulley 2 rotating?**



* A. 180 rpm
* B. 240 rpm
* C. 300 rpm
* D. 360 rpm

**14. In the pulley system shown (above), which pulley is rotating the slowest?**

* A. A
* B. B
* C. C
* D. D

**15. Operating this car jack will take less effort if you**

* A. add weight to the other side of the car.
* B. get a longer jack handle.
* C. open the hood of the car.
* D. replace the jack handle with one just like it made of wood.

**16. Which material is best for the floor of a fireplace?**



* A. Wood
* B. Plastic
* C. Stone
* D. Glass

**17. What effort is required to lift the load?**



* A. 40 lb
* B. 50 lb
* C. 100 lb
* D. 200 lb

**18. What makes the water flow out of the tank and through the siphon hose into the bucket?**



* A. Air pressure
* B. Water pressure
* C. The weight of the water
* D. Magnetism

**19. In the diagram, gear B is an idler gear. If gear B is rotating clockwise,**



* A. gear A is rotating clockwise, but gear C is rotating counterclockwise.
* B. gear A and gear C are rotating clockwise.
* C. gear A and gear C are rotating counterclockwise.
* D. gear A is rotating counterclockwise, but gear C is rotating clockwise.

**20. A wrench uses which simple machine to turn a bolt?**

* A. Lever
* B. Inclined plane
* C. Pulley
* D. Wheel and axle

**21. The diagram shows a box of books on a shelf supported by two posts. Which post bears the greater part of the weight?**



* A. Post A.
* B. Post B.
* C. Each post bears the same amount of weight.
* D. The shelf distributes the weight equally.

**22. Water is flowing into the tank from the upper faucet at the rate of 240 gallons per hour and draining out of the tank through the lower faucet at a rate of 1 gallon per minute. How many more gallons of water will be in the tank after 6 minutes?**



* A. 14
* B. 16
* C. 18
* D. 22

**23. The diagram shows a rotating disk. When the disk rotates, which point travels farthest?**



* A. Point A.
* B. Point B.
* C. Point C.
* D. Points B and C both travel the same distance.

**24. Which flat cardboard pattern can be folded along the dotted lines to form the complete, totally enclosed box shown?**



* A. 1
* B. 2
* C. 3
* D. 4

**25. After the crank (A) rotates 9.5 times, where will the piston (B) be?**



* A. In the same place as shown
* B. At the top of the cylinder
* C. At the bottom of the cylinder
* D. B or C

**Answer Keys and Explanation**

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