

## Indian Air force Mechanical Engineering Question Paper 2011 Engineering Knowledge Test (EKT) Papers

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1. An impulse turbine

(A) Makes use of a draft tube

(B) Always operates submerged

(C) Converts the pressure head into velocity head through the vanes

(D) Is most suited for low head installations

2. Power required to drive a centrifugal pump is directly proportional to

(A) Diameter of its impeller

(B) Square of diameter of its impeller

(C) Cube of diameter of its impeller

(D) Fourth power of diameter of its impeller

3. The locus of the common point on the two meshing spur gears is known as

(A) Addendum circle

(B) Duodenum circle

(C) Pitch circle

(D) Base circle

4. When there is a reduction in amplitude over every cycle of vibration then the body is said to have

(A) Free vibration

(B) Forced vibration

(C) Damped vibration

(D) Natural vibration

5. For machining at high speed the tool material should have

(A) Wear resistance

(B) Red hardness

(C) Toughness

(D) All of these

6. MIG welding is

(A) A gas welding process

(B) An electric resistance welding process

(C) A electric resistance welding process

(D) A forge welding process involving high temperatures and low pressures

7. The ability of sand to permit the metal to shrink when it solidifies is known as

(A) Plasticity (B) Permeability

(C) Collapsibility (D) Cohesiveness

8. Rivets are generally specified by

(A) Overall length

(B) Shank diameter

(C) Thickness of plates to be jointed

(D) Diameter of head

9. Which of the following is steady flow compressor

- (A) Reciprocating compressor
- (B) Centrifugal compressor
- (C) Voot blower
- (D) Vane blower

10. A closed cycle gas turbine works on

- (A) Carnot cycle (B) Rankine cycle
- (C) Brayton cycle (D) Joule cycle

11. Thermal conductivity of solid metals

- (A) Decreases with rise in temperature
- (B) Does not vary with temperature
- (C) Increases with rise in temperature
- (D) Remains constant with rise in temperature

12. During adiabatic saturation process, air property which remains constant, is known as

- (A) Wet bulb temperature
- (B) Dry bulb temperature
- (C) Relative humidity
- (D) Specific humidity

13. Bell-Coleman cycle as applied to refrigeration operates

- (A) On open air system
- (B) On vapour compression system
- (C) On vapour absorption system
- (D) On none of these

14. The gears in which axes of the shaft connected by them, intersect, are known as

- (A) Spur gears (B) Bevel gears
- (C) Spiral gears (D) Gear train

15. Shot peening

- (A) Is done at re-crystallization temperature
- (B) Changes the crystalline structure at materials
- (C) Improves the fatigue life of small parts
- (D) Refines the grain structure

16. In a bomb calorimeter the heat released by the fuel is absorbed by

- (A) Atmospheric air
- (B) Water
- (C) Metal container
- (D) Bomb, water and metal container

17. Nitriding is done

- (A) On low carbon steels only
- (B) To impart blue colour to steels
- (C) To improve machinability
- (D) To increase surface hardness

18. The extent of cold work that a metal can withstand depends on

- (A) Purity of metal
- (B) Carbon percentage
- (C) Ductility
- (D) Room temperature

19. Which engine has the highest air fuel ratio

- (A) Petrol engine (B) Gas engine
- (C) Diesel engine (D) Gas turbine

20. Annealing of steels is done to

- (A) Remove internal stresses
- (B) Produce soft core under hard surface
- (C) Produce hard core under soft surface
- (D) Introduce capacity to withstand shocks