

## Indian Air Force General Engineering Question Paper 2011 Engineering Knowledge Test (EKT)

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1. The probability of hitting a target from one gun 9/10, from another gun is 7/10. If both gun are fired at the same time, the probability of hitting the target is

- (A)  $2/20$  (B)  $63/100$   
(C)  $16/20$  (D)  $63/20$

2. If the three vectors a, b and c are coplanar, then the missed product a x b. c is

- (A) Zero (B) Non-Zero  
(C) Unity (D) Non of these

6. When a body hits an obstacle, the force with which it hits the obstacle depends upon its

- (A) average velocity  
(B) velocity at the instant of collision  
(C) initial velocity  
(D) all of these

7. The wavelength of visible light is of the order of

- (A)  $1\mu\text{m}$  (B)  $100\mu\text{m}$   
(C)  $1\text{mm}$  (D)  $1\text{\AA}$

8. Whenever a source of sound moves towards an observer

- (A) the frequency heard by the observer is less than that of the source  
(B) the frequency heard by the observer is greater than that of the source  
(C) the frequency heard by the observer is unchanged  
(D) the wavelength of sound heard is greater than that of the sound emitted

9. Moving electric charges will interact with

- (A) electric field only  
(B) magnetic field only  
(C) both of these  
(D) none of these

10. Gamma radiation is most similar to

- (A) sound waves (B) X-ray  
(C) Alpha particles (D) neutrons

11. The fundamental particle responsible for keeping the nucleus together is

- (A) meson (B) anti proton  
(C) positron (D) muon

12. Air contains 21% oxygen by volume and the rest nitrogen. If the barometer pressure is 740 mm of Hg the partial pressure of oxygen is close to

- (A) 155 mm of Hg  
(B) 310 mm of Hg  
(C) 465 mm of Hg  
(D) 162 mm of Hg

13. In the electrolytic cell

- (A) electrical energy is converted into chemical energy
- (B) chemical energy is converted into electrical energy
- (C) mechanical energy is converted into potential energy
- (D) potential energy is converted into kinetic energy

14. The force required to maintain a body at constant speed in free space is equal to

- (A) the mass of the body
- (B) zero
- (C) the weight of the body
- (D) the force required to stop it

15. If the length of a spring is halved, the spring constant becomes

- (A) half (B) 1/4th
- (C) double (D) four times

16. The coefficient of static friction depends on

- (A) the material of the bodies in contact
- (B) the quality of surface finish of the bodies
- (C) the presence of foreign matter between the surface
- (D) all of these

17. The units of angular impulse in SI system are

- (A) Nms (B) Ns
- (C) Nm/s (D) Ns/m

19. Stainless steel contains iron and

- (A) Chromium and nickel
- (B) Chromium and carbon
- (C) Nickel and carbon
- (D) Chromium and manganese

20. The property of material by which it offers resistance to scratching or indentation is called

- (A) Brittleness
- (B) Hardness
- (C) Toughness
- (D) Resilience

21. The failure of a material due to repeated stressing is known as

- (A) Creep
- (B) Fracture
- (C) Fatigue
- (D) Brittle Fracture

22. The electric device which blocks DC but allows AC is called

- (A) Capacitor
- (B) Inductor
- (C) Amplifier
- (D) Transducer

23. When a charge is moved from one point to another in an electric field, the work done is

- (A) independent of the path
- (B) zero along the direction of the field

- (C) measured in Joules per metre
- (D) measure in Volt per metre

24. A capacitor with lowest leakage is

- (A) Paper (B) Ceramic
- (C) Polyester (D) Mica

25. A zener diode operates

- (A) In an extremely high forward bias
- (B) In an extremely low reverse bias
- (C) In an extremely low forward bias
- (D) In a reverse bias higher than laid down voltage

26. The specific gravity of a lead acid cell is often used as a measure of its

- (A) Rate of discharge
- (B) Operating temperature
- (C) State of charge
- (D) Life expectancy

27. An uniformly distributed load is one which

- (A) Acts at a point on a beam
- (B) Spreads uniformly over the whole length of a beam
- (C) Varies uniformly over the whole length of a beam
- (D) loads the beam from one end only

28. A steam engine device which keeps the speed of the engine, all loads, constant is known as

- (A) Flywheel
- (B) Eccentric
- (C) Connecting rod
- (D) Governor

29. The refrigerant having the lowest freezing point is

- (A) Ammonia
- (B) Carbon dioxide
- (C) Freon - 11
- (D) Freon - 22

30. Heat and work are

- (A) Path functions
- (B) Properties of a substance
- (C) Point functions
- (D) Absolute units