31. Three coplanar forces acting on a body keep it in equilibrium. They should therefore be

A. concurrent
B. non concurrent
C. parallel
D. non parallel

Answer: Option **A**

---

32. which of the following pairs does not have identical dimensions ?

A. torque and energy
B. momentum and impulse
C. energy and work
D. mass and moment of inertia

Answer: Option **D**

---

33. A central force is that which

A. can produce torque
B. can not produce torque
C. some time can produce torque some time can not
D. has no relation with torque

Answer: Option **B**

---

34. It is easier to turn a steering wheel with both hands than with a single hand because

A. accelerating force increases on the wheel
B. two forces act on the wheel
C. two hands provide firm grip
D. couple acts on the wheel

Answer: Option **D**

---

35. The cross product i^ x j^ is equal to

A. zero
B. one
C. i^
D. k^

Answer: Option **D**

---

36. ? The unit vector in the direction of vector A = 2 i^ -2j^ + k^ is

A. 2i^ - 2j^ + k^

B. (2i^ - 2j^ +k^)/9

C. (2i^ - 2j^ +k^)/3

D. (2i^ - 2j^ +k^)/5

Answer: Option **C**

---

37. The magnitude of i^. (j^ x k^) is

A. 0

B. 1

C. -1

D. i^

Answer: Option **B**

---

38. In which quadrant, only value of tan will be positive?

A. first

B. second

C. third

D. both 1st and 3rd

Answer: Option **D**

---

39. ? ? If A=Ax i^ + Ay j^ + Az K^ B = Bx i^ + By j^ + Bz K^ then

A. ?? A. B = Ax Bx + Ay By + Az Bz

B. ?? A. B = Ax By + Ay Bz + Az By

C. ?? A. B = Ay Bz + Az By + Az Bx

D. ?? A. B = Ax Bz + Ay By + Az Bx

Answer: Option **A**

---

40. The cross product of two vectors is a negative vector when

A. they are parallel vectors

B. they are anti parallel vectors

C. they are perpendicular vector

D. they are rotated through 270?

Answer: Option **D**