ZIAUDDIN UNIVERSITY
EXAMINATION BOARD

EXAMINATION MATERIAL ZUEB - 2022

PHYSICS (SCIENCE).

SECTION "A" MULTIPLE CHOICE QUESTION (MCQ'S)

1. Which pair include a vector quantity and a scalar quantity.
   a. Displacement/Acceleration
   b. **Force/Kinetic Energy**
   c. Power/Speed
   d. Work/Potential Energy

2. If $|\vec{A} + \vec{B}| = |\vec{A}| = |\vec{B}|$ then the angle between $\vec{A}$ and $\vec{B}$ is.
   a. 120^o
   b. 60^o
   c. 0^o
   d. 90^o

3. Which of the following show the correct dimension of velocity, force and momentum

	VELOCITY	FORCE	MOMENTUM
a	LT^{-1}	MLT^{-2}	MLT^{-1}
b	MLT^{-2}	LT^{-1}	LT^{2}
c	**LT^{-1}**	**LT^{-1}**	**MLT^{-2}**
d	MLT^{-2}	MLT^{2}	LY

4. The rate of change of angular momentum is called:
   a. Power
   b. Torque
   c. Momentum
   d. Force

5. To produce the same acceleration in the body of masses 10kg and 20kg the force applied on the second body should be:
   a. Halved
   b. Equal to that o first body
   c. Doubled
   d. Three times

6. How long does it takes by a car going at 30m/s to stop if it deaccelerates at 7m/s:
    a. 4 sec.
    b. 5 sec.
    c. 6 sec.
    d. 7 sec.
7. If the radius of the earth were to shrink by 1% while its mass remains same, the acceleration due to gravity on the earth surface would:
    a. Decreased
    b. Remains same
    c. Increase
    d. Become half
8. The equation represents Bragg's law
    a. $m\lambda = 2d\sin\theta$
    b. $2m\lambda = 2d\sin\theta$
    c. $m\lambda = d\sin\theta$
    d. $2m\lambda = 3d\sin\theta$
9. Both Kilowatt hour and electron volt are the units of:
    a. Power
    b. Charge
    c. Energy
    d. Angular momentum
10. If $\vec{F} = 3i$ and $\vec{d} = 6j$ the work done will be:
    a. Zero
    b. 2
    c. 9
    d. 18
11. Beats are produced due to:
    a. Diffraction of wave in time
    b. Reflection of waves in time
    c. Polarization of waves in time
    d. Interference of wave in time
12. The point which describes the motion of the whole system or body is known as the:
    a. Centre of gravity
    b. Centre of mass
    c. Inertia
    d. Momentum of inertia
13. A projectile is thrown upward with a certain velocity. Its time of flight will be minimum, if it is launched at an angle of:
    a. 30^o
    b. 45^o
    c. 60^o
    d. 75^o

14. Weber Fechner Law is:

a. I α log L
b. L α log I
c. I α $\frac{1}{\quad}$
d. L α I log*L*

15. A bus of weight 30000N is moving with uniform velocity of 14m/s its acceleration is:

a. 14 m/s^2
b. Zero
c. 7 m/s^2
d. 9.8 m/s^2

16. The ocean tides are caused by:

a. Earth's gravitational force only
b. Moon's gravitational force only
c. Sun's gravitational force only
d. Gravitational force of both sun and moon

17. Both kilowatt hour and electron volt are the unit of:

a. Power
b. Energy
c. Charge
d. Angular momentum

18. The speed of sound in vacuum is:

a. Zero
b. 332 m/s
c. 33200 cm/s
d. 43232 m/s

19. The number of lines per cm of a diffraction grating is 4000. Its grating element is:

a. $2.5 * 10^{-4}$ cm
b. $5 * 10^{-4}$ cm
c. $2.5 * 10^{-2}$ cm
d. $5 * 10^{-2}$ cm

20. The magnitude of product $k.(j * i)$:

a. Zero
b. 1
c. -1
d. $|k|$

21. Power law determines:

a. Power
b. Work
c. Intensity
d. Loudness of sound

22. In the terrestrial telescope, the central lens is used to:

a. Increase magnifying power
b. Correct the image
c. Both of these
d. None of these

23. A body falls freely. The distance covered by it in 2 sec. is:

a. 9.8 m
b. **19.6 m**
c. 39.2 m
d. 100 m

24. The centre of mass of a body:

a. Always coincides with centre of gravity
b. Never coincides with centre of gravity
c. **May Coincides with centre of gravity**
d. Is lower than the centre of gravity

25. The S.I. unit of intensity level of sound is:

a. Watt
b. Diopter
c. Sone
d. Decibel

26. If the axis of rotation of a rotation body passes through the body itself, then its motion is called:

a. Linear motion
b. Orbital motion
c. Spin motion
d. S.H. motion

27. The property of fluids due to which they resist their flow is called:

a. Coefficient of friction
b. Static friction
c. Viscosity
d. Terminal velocity

28. The frequency of wave produced in a stretched string depends upon:

a. Length
b. Tension
c. Linear density
d. All of these

29. According to Maxwell theory, light travels in the form of:

a. Transverse wave
b. Longitudinal wave
c. Mechanic wave
d. Electromagnetic wave

30. At a distance equal to the radius of the earth above the surface of earth, the value of gravitational acceleration becomes:

a. Half
b. One forth
c. Double
d. Four times

31. Electron volt is the unit of:

a. Power
b. Voltage
c. Energy
d. Charge

32. When a torque acting on a system is zero, this will be constant:

a. Force
b. Angular momentum
c. Linear momentum
d. Velocity

33. The value of gravitational constant "G" was determined:

a. Cavendish
b. Newton
c. Joules
d. Huygens

34. The magnification of compound microscope is found to be 30, If magnification of objective is 3, then magnification of eye piece will be

a. 50
b. **10**
c. 27
d. 33

35. A convex lens behave like

a. **Converging lens**
b. Diverging lens
c. Both converging & Delivering
d. None of these

36. Tides are formed due to gravitational attraction of _____

a. Sun only
b. Moon only
c. **Both sun & moon**
d. None of these

37. The angular momentum of particle changes from 15 Js to 25Js in 0.2 sec. The torque is

a. 5 Nm
b. 25 Nm
c. 30 Nm
d. 50 Nm

38. Intensity level of sound of intensity 10^{-4} watt/m^2 is _____

a. 40db
b. 60db
c. 80db
d. 100db

39. The transverse nature of light was confirmed by

a. Interference
b. Diffraction
c. **Polarization**
d. Dispersion

40. The spring is cut into three equal part the spring constant of each part would be

a. Double
b. Halved
c. Remain
d. Unchanged

41. An object is placed in front of convex lens of focal length 10cm. To get a real image double of its size the object double be placed at _____ cm

a. 5cm
b. 10cm
c. 15cm
d. 30cm

42. Which of the following factor affect speed of sound in air

I. Density
II. Pressure
III. Temperature

a. I and II
b. I and III
c. II and III
d. I,II and III

43. The distance between two consecutive nodes of a transverse stationary wave is equal to:

a. $\frac{\lambda}{2}$
b. $\frac{\lambda}{4}$
c. λ
d. 2λ

44. The frequency of a second's pendulum is:

a. 1 Hz
b. 2 Hz
c. 0.5 Hz
d. 0.25 Hz

45. Which of the following phenomenon cannot be explained on the particle nature of light?

a. Photoelectric effect
b. Compton's effect
c. Pair production
d. **Interference**

SECOND YEAR

46. Total potential difference across the combination of three cells becomes maximum when:

a. All the three cells are connected in series.
b. All the three cells are connected in parallel.
c. Two cells are connected in series and the third cell in series with the combination.
d. Two cells are connected in series and the third cell in series with the combination.

47. If a vector is multiplied by negative number, then direction will

a. Be reversed
b. Be changed by 45
c. Be changed by 90
d. Remain the same

48. Which of the following does Interferometer measure?

a. Wavelength of light
b. Thickness of thin objects
c. Illuminating power of light
d. Velocity of light in gases

49. Assume a person jumped from an airplane with a parachute, so the equilibrium possessed by the body at a certain point is called:

a. Static Equilibrium
b. Dynamic Equilibrium
c. Stable Equilibrium
d. Unstable Equilibrium

50. Solve the Vectors $i \times (j \times k)$

a. 0
b. 1
c. I
d. J

51. What is the unit of angular velocity?

a. m/s
b. Kg/s
c. Rad/s
d. Rad/s^2

52. An object is thrown vertically upward the quantity which becomes zero for an instant

a. Acceleration
b. Kinetic energy
c. Weight
d. Mass

53. The Iris control the _____

a. Wavelength of the light entering in the eye
b. Speed of light entering in the eye
c. Amount of light entering in the eye
d. Frequency of light entering in the eye

54. If a body is executing simple harmonic motion (SHM) then total energy of the body is directly proportional to

a. Amplitude
b. Square of amplitude
c. Reciprocal of amplitude
d. Square root of amplitude

55. A football kicked by football player in the air is an example of

a. Linear motion
b. Circular motion
c. Projectile motion
d. Rotational motion

56. The dimension of energy and _____ are identical.

a. Force
b. Power
c. Torque
d. Angular