

Tribhuvan University, Institute of Science and Technology
Central Department of Computer Science and Information Technology
Model Question Paper, B.Sc. Computer Science and Information Technology

Subject: PHYSICS

Full Marks: 50

Time: 30

Put correct answer on the answer sheet given. Attempt all question

1. Which of following has different dimensional formula
i. Pressure ii. Elasticity iii. Stress v. Strain
2. The period of a simple pendulum is doubled when
i. its length is doubled ii. the mass of the bob is doubled
iii. the length is made four times
iii. the mass of the bob and length of the pendulum are doubled.
3. In a molecule of NaCl, the sodium atom has a relative atomic mass of above 23.0 and the chlorine atom one of about 35.5. If the separation of the atoms is a , the center of mass has a distance from Na atom.
i. $0.6a$ ii. $0.8a$ iii. $0.5a$ iv. $0.4a$
4. A potential energy of a string stretched by 2mm is V . If the spring is stretched by 6mm its potential energy will be
i. V ii. $3V$ iii. $3/V$ iv. $9V$
5. The speed needed to put a satellite in orbit does not depend up on
i. Radius of orbit ii. Shape of orbit
iii. Value of g on orbit iv. Mass of satellite
6. Two bodies will be in thermal equilibrium if they have same,
i. Specific heat ii. Heat energy iii. Temperature iv. Thermal conductivity
7. The boiling water is changing into steam. Under this condition, the specific heat of water is,
i. Zero ii. One iii. Less than one iv. infinite
8. The ratio of kinetic energy of oxygen and hydrogen molecules at NTP is,
a. 1:16 b. 1:1 c. 1:8 d. 8:1
9. The efficiency of Carnot's engine operating between 300 K and 500 K is
a. $2/5$ b. $3/5$ c. $6/5$ d. $2/3$
10. When light pass from air to water
a. Wave length increases b. frequency increases
c. wave length decreases d. frequency decreases
11. Focal length of a equiconvex lens ($\mu=1.5$) is
a. equal to radius b. half the radius c. twice the radius d. infinity
12. You are given four lenses of focal lengths 1 cm, 2cm, 10 cm and 100cm. which combination would use for microscope?
a. 1 cm and 2 cm b. 2 cm and 10 cm c. 2 cm and 100 cm d. 1cm & 100 cm
13. Wave theory of light cannot explain:
a. interference b. diffraction c. polarization d. photoelectric effect
14. Ultrasonic waves have frequency
a. <20 hz b. between 20 and 20,000 hz c. >20 khz d. equal to 20 hz
15. A person can distinguish his friend with out seeing him because of
a. Timbre b. Pitch c. Loudness d. non of above
16. If an electron enters electric field at a right angle to the direction of field, then what will be its path
a. circular b. parabolic c. Hyperbolic d. straight line
17. Capacity of parallel plate capacitor decreases when
a. distance between plates is increased b. area between plates is decreased
c. distance between plates is decreased d. both a) and b)
18. Kirchoff's current law is based on
a. energy b. mass c. charge d. current
19. The magnetic moment of a coil of 1000 turns & area $5 \times 10^{-4} \text{m}^2$ carrying current of 0.2 A is
a. 0.1 b. average value c. square root of average value d. RMS value
20. AC meter measure
a. Peak value b. average value c. square root of average value d. RMS value
21. At the magnetic pole angle of dip is
a. 0° b. 45° c. 60° d. 90°
22. Electric and magnetic field can not accelerate
a. electrons b. α - particles c. photons d. none of the above
23. When a semiconductor is doped with gallium, it became
a. diode b. n-type semiconductor c. p-type semiconductor d. transistor
24. Which of the following radiation is most penetrating?
a. α - particle b. β -particle c. γ -radiation d. X- rays
25. The origin of hydrogen spectra is due to:
a. acceleration of orbital electrons b. the removal of electron from atom
c. the collision of electron with the atom
d. the transition of electron from outer orbit to inner orbit