|  |  |
| --- | --- |
| ***Board*** | CBSE |
| ***Class*** | 11th |
| ***Batch Type*** | ENGLISH MEDIUM |
| ***Subject*** | BIOLOGY |
| ***Chapter*** | **THE LIVING WORLD** |

|  |  |
| --- | --- |
| ***Question 1*** | The density of material in CGS system of units is . In a system of units in which unit of length is 10 cm and unit of mass is 100 g , the value of density of material will be |
| ***A*** | 0.4 unit |
| ***B*** | 40 unit |
| ***C*** | 400 unit |
| ***D*** | 0.04 unit |
| ***Correct Answer*** |  |
| ***Explanation*** |  |
| ***Difficulty Level*** |  |

|  |  |
| --- | --- |
| ***Question 2*** | The time period of a body under S.H.M. is represented by: where is pressure, is density and is surface tension, then values of and are |
| ***A*** |  |
| ***B*** |  |
| ***C*** |  |
| ***D*** |  |
| ***Correct Answer*** |  |
| ***Explanation*** |  |
| ***Difficulty Level*** |  |

|  |  |
| --- | --- |
| ***Question 3*** | The respective number of significant figures for the numbers and are |
| ***A*** |  |
| ***B*** |  |
| ***C*** |  |
| ***D*** |  |
| ***Correct Answer*** |  |
| ***Explanation*** |  |
| ***Difficulty Level*** |  |

|  |  |
| --- | --- |
| ***Question 4*** | Young's modulus of a material has the same unit as that of |
| ***A*** | pressure |
| ***B*** | strain |
| ***C*** | compressibility |
| ***D*** | force |
| ***Correct Answer*** |  |
| ***Explanation*** |  |
| ***Difficulty Level*** |  |

|  |  |
| --- | --- |
| ***Question 5*** | Of the following quantities, which one has dimensions different from the remaining three? |
| ***A*** | Energy per unit volume |
| ***B*** | Force per unit area |
| ***C*** | Product of voltage and charge per unit volume |
| ***D*** | Angular momentum |
| ***Correct Answer*** |  |
| ***Explanation*** |  |
| ***Difficulty Level*** |  |

|  |  |
| --- | --- |
| ***Question 6*** | The pressure on a square plate is measured by measuring the force on the plate and length of the sides of the plate by using the formula . If the maximum errors in the measurement of force and length are and respectively, then the maximum error in the measurement of pressure is |
| ***A*** |  |
| ***B*** |  |
| ***C*** |  |
| ***D*** |  |
| ***Correct Answer*** |  |
| ***Explanation*** |  |
| ***Difficulty Level*** |  |

|  |  |
| --- | --- |
| ***Question 7*** | The siemen is the SI unit of |
| ***A*** | resistivity |
| ***B*** | resistance |
| ***C*** | conductivity |
| ***D*** | conductance |
| ***Correct Answer*** |  |
| ***Explanation*** |  |
| ***Difficulty Level*** |  |

|  |  |
| --- | --- |
| ***Question 8*** | An object is moving through the liquid. The viscous damping force acting on it is proportional to the velocity. Then dimensions of constant of proportionality are |
| ***A*** |  |
| ***B*** |  |
| ***C*** |  |
| ***D*** |  |
| ***Correct Answer*** |  |
| ***Explanation*** |  |
| ***Difficulty Level*** |  |

|  |  |
| --- | --- |
| ***Question 9*** | The least count of a stop watch is 0.2 second. The time of 20 oscillations of a pendulum is measured to be 25 second. The percentage error in the measurement of time will be |
| ***A*** |  |
| ***B*** |  |
| ***C*** |  |
| ***D*** |  |
| ***Correct Answer*** |  |
| ***Explanation*** |  |
| ***Difficulty Level*** |  |

|  |  |
| --- | --- |
| ***Question 10*** | Weber is the unit of |
| ***A*** | magnetic susceptibility |
| ***B*** | intensity of magnetisation |
| ***C*** | magnetic flux |
| ***D*** | magnetic permeability |
| ***Correct Answer*** |  |
| ***Explanation*** |  |
| ***Difficulty Level*** |  |

|  |  |
| --- | --- |
| ***Question 11*** | The physical quantity which has the dimensional formula [ is |
| ***A*** | surface tension |
| ***B*** | solar constant |
| ***C*** | density |
| ***D*** | compressibility |
| ***Correct Answer*** |  |
| ***Explanation*** |  |
| ***Difficulty Level*** |  |

|  |  |
| --- | --- |
| ***Question 12*** | The dimensions of Wien's constant are |
| ***A*** |  |
| ***B*** |  |
| ***C*** |  |
| ***D*** | MLTK] |
| ***Correct Answer*** |  |
| ***Explanation*** |  |
| ***Difficulty Level*** |  |

|  |  |
| --- | --- |
| ***Question 13*** | If the capacitance of a nanocapacitor is measured in terms of a unit ' ' made by combining the electric charge ' ', Bohr radius ' ', Planck's constant ' ' and speed of light ' ' then |
| ***A*** |  |
| ***B*** |  |
| ***C*** |  |
| ***D*** |  |
| ***Correct Answer*** |  |
| ***Explanation*** |  |
| ***Difficulty Level*** |  |

|  |  |
| --- | --- |
| ***Question 14*** | The dimensions of are |
| ***A*** |  |
| ***B*** |  |
| ***C*** |  |
| ***D*** |  |
| ***Correct Answer*** |  |
| ***Explanation*** |  |
| ***Difficulty Level*** |  |

|  |  |
| --- | --- |
| ***Question 15*** | The density of a cube is measured by measuring its mass and length of its sides. If the maximum error in the measurement of mass and length are and respectively, the maximum error in the measurement of density will be |
| ***A*** |  |
| ***B*** |  |
| ***C*** |  |
| ***D*** |  |
| ***Correct Answer*** |  |
| ***Explanation*** |  |
| ***Difficulty Level*** |  |

|  |  |
| --- | --- |
| ***Question 16*** | Which is different from others by units ? |
| ***A*** | Phase difference |
| ***B*** | Mechanical equivalent |
| ***C*** | Loudness of sound |
| ***D*** | Poisson's ratio |
| ***Correct Answer*** |  |
| ***Explanation*** |  |
| ***Difficulty Level*** |  |

|  |  |
| --- | --- |
| ***Question 17*** | A quantity is given by where is the permittivity of the free space, is a length, is a potential difference and is a time interval. The dimensional formula for is the same as that of |
| ***A*** | resistance |
| ***B*** | charge |
| ***C*** | voltage |
| ***D*** | current |
| ***Correct Answer*** |  |
| ***Explanation*** |  |
| ***Difficulty Level*** |  |

|  |  |
| --- | --- |
| ***Question 18*** | If the error in the measurement of the volume of sphere is , then the error in the measurement of its surface area will be |
| ***A*** |  |
| ***B*** |  |
| ***C*** |  |
| ***D*** |  |
| ***Correct Answer*** |  |
| ***Explanation*** |  |
| ***Difficulty Level*** |  |

|  |  |
| --- | --- |
| ***Question 19*** | If velocity , force and energy ( E ) are taken as fundamental units, then dimensional formula for mass will be |
| ***A*** |  |
| ***B*** |  |
| ***C*** |  |
| ***D*** |  |
| ***Correct Answer*** |  |
| ***Explanation*** |  |
| ***Difficulty Level*** |  |

|  |  |
| --- | --- |
| ***Question 20*** | Multiply 107.88 by 0.610 and express the result with correct number of significant figures. |
| ***A*** | 65.8068 |
| ***B*** | 65.807 |
| ***C*** | 65.81 |
| ***D*** | 65.8 |
| ***Correct Answer*** |  |
| ***Explanation*** |  |
| ***Difficulty Level*** |  |

|  |  |
| --- | --- |
| ***Question 21*** | Which of the following is a dimensional constant? |
| ***A*** | Refractive index |
| ***B*** | Poissons ratio |
| ***C*** | Strain |
| ***D*** | Gravitational constant |
| ***Correct Answer*** |  |
| ***Explanation*** |  |
| ***Difficulty Level*** |  |

|  |  |
| --- | --- |
| ***Question 22*** | If and represent energy, mass, angular momentum and gravitational constant respectively, then the dimensional formula of is same as that of the |
| ***A*** | angle |
| ***B*** | length |
| ***C*** | mass |
| ***D*** | time |
| ***Correct Answer*** |  |
| ***Explanation*** |  |
| ***Difficulty Level*** |  |

|  |  |
| --- | --- |
| ***Question 23*** | The refractive index of water measured by the relation is found to have values of , 1.32 and 1.36; the mean value of refractive index with percentage error is |
| ***A*** |  |
| ***B*** |  |
| ***C*** |  |
| ***D*** |  |
| ***Correct Answer*** |  |
| ***Explanation*** |  |
| ***Difficulty Level*** |  |

|  |  |
| --- | --- |
| ***Question 24*** | If e is the charge, the potential difference, the temperature, then the units of are the same as that of |
| ***A*** | Planck's constant |
| ***B*** | Stefan's constant |
| ***C*** | Boltzmann's constant |
| ***D*** | gravitational constant |
| ***Correct Answer*** |  |
| ***Explanation*** |  |
| ***Difficulty Level*** |  |

|  |  |
| --- | --- |
| ***Question 25*** | The dimensions of mobility are |
| ***A*** |  |
| ***B*** |  |
| ***C*** |  |
| ***D*** |  |
| ***Correct Answer*** |  |
| ***Explanation*** |  |
| ***Difficulty Level*** |  |

|  |  |
| --- | --- |
| ***Question 26*** | Two quantities and have different dimensions which mathematical operation given below is physically meaningful? |
| ***A*** |  |
| ***B*** |  |
| ***C*** |  |
| ***D*** |  |
| ***Correct Answer*** |  |
| ***Explanation*** |  |
| ***Difficulty Level*** |  |

|  |  |
| --- | --- |
| ***Question 27*** | The velocity of water waves (v) may depend on their wavelength 1 , the density of water and the acceleration due to gravity, g. The method of dimensions gives the relation between these quantities is |
| ***A*** | v |
| ***B*** |  |
| ***C*** |  |
| ***D*** |  |
| ***Correct Answer*** |  |
| ***Explanation*** |  |
| ***Difficulty Level*** |  |

|  |  |
| --- | --- |
| ***Question 28*** | The physical quantities not having same dimensions are |
| ***A*** | torque and work |
| ***B*** | momentum and Planck's constant |
| ***C*** | stress and Young's modulus |
| ***D*** | speed and |
| ***Correct Answer*** |  |
| ***Explanation*** |  |
| ***Difficulty Level*** |  |

|  |  |
| --- | --- |
| ***Question 29*** | A physical quantity of the dimensions of length that can be formed out of and is [ is velocity of light, is universal constant of gravitation and e is charge] |
| ***A*** |  |
| ***B*** |  |
| ***C*** |  |
| ***D*** |  |
| ***Correct Answer*** |  |
| ***Explanation*** |  |
| ***Difficulty Level*** |  |

|  |  |
| --- | --- |
| ***Question 30*** | The unit of impulse is the same as that of |
| ***A*** | energy |
| ***B*** | power |
| ***C*** | momentum |
| ***D*** | velocity |
| ***Correct Answer*** |  |
| ***Explanation*** |  |
| ***Difficulty Level*** |  |

|  |  |
| --- | --- |
| ***Question 31*** | If Q denote the charge on the plate of a capacitor of capacitance then the dimensional formula for is |
| ***A*** |  |
| ***B*** |  |
| ***C*** |  |
| ***D*** |  |
| ***Correct Answer*** |  |
| ***Explanation*** |  |
| ***Difficulty Level*** |  |

|  |  |
| --- | --- |
| ***Question 32*** | The mass of the liquid flowing per second per unit area of cross-section of the tube is proportional to (pressure difference across the ends) and (average velocity of the liquid . Which of the following relations between m and n is correct? |
| ***A*** |  |
| ***B*** |  |
| ***C*** |  |
| ***D*** |  |
| ***Correct Answer*** |  |
| ***Explanation*** |  |
| ***Difficulty Level*** |  |

|  |  |
| --- | --- |
| ***Question 33*** | The Richardson equation is given by . The dimensional formula for is same as that for |
| ***A*** | I T |
| ***B*** | kT |
| ***C*** |  |
| ***D*** |  |
| ***Correct Answer*** |  |
| ***Explanation*** |  |
| ***Difficulty Level*** |  |

|  |  |
| --- | --- |
| ***Question 34*** | Turpentine oil is flowing through a capillary tube of length and radius r . The pressure difference between the two ends of the tube is p. The viscosity of oil is given by : .Here is velocity of oil at a distance from the axis of the tube. From this relation, the dimensional formula of is |
| ***A*** |  |
| ***B*** |  |
| ***C*** |  |
| ***D*** |  |
| ***Correct Answer*** |  |
| ***Explanation*** |  |
| ***Difficulty Level*** |  |

|  |  |
| --- | --- |
| ***Question 35*** | Given that , where y and x are measured in metre. Which of the following statements is true? |
| ***A*** | The unit of is same as that of and |
| ***B*** | The unit of is same as that of but not of |
| ***C*** | The unit of c is same as that of |
| ***D*** | The unit of is same as that of |
| ***Correct Answer*** |  |
| ***Explanation*** |  |
| ***Difficulty Level*** |  |

|  |  |
| --- | --- |
| ***Question 36*** | If , then |
| ***A*** | 4.431 cm |
| ***B*** | 4.43 cm |
| ***C*** | 4.4 cm |
| ***D*** | 4 cm |
| ***Correct Answer*** |  |
| ***Explanation*** |  |
| ***Difficulty Level*** |  |

|  |  |
| --- | --- |
| ***Question 37*** | In the relation , the dimension(s) of is/are |
| ***A*** |  |
| ***B*** |  |
| ***C*** |  |
| ***D*** |  |
| ***Correct Answer*** |  |
| ***Explanation*** |  |
| ***Difficulty Level*** |  |

|  |  |
| --- | --- |
| ***Question 38*** | In a vernier callipers, ten smallest divisions of the vernier scale are equal to nine smallest division on the main scale. If the smallest division on the main scale is half millimeter, then the vernier constant is |
| ***A*** | 0.5 mm |
| ***B*** | 0.1 mm |
| ***C*** | 0.05 mm |
| ***D*** | 0.005 mm |
| ***Correct Answer*** |  |
| ***Explanation*** |  |
| ***Difficulty Level*** |  |

|  |  |
| --- | --- |
| ***Question 39*** | Which two of the following five physical parameters have the same dimensions? (A) Energy density (B) Refractive index (C) Dielectric constant (D) Young's modulus (E) Magnetic field |
| ***A*** | (B) and (D) |
| ***B*** | (C) and (E) |
| ***C*** | (A) and (D) |
| ***D*** | (A) and (E) |
| ***Correct Answer*** |  |
| ***Explanation*** |  |
| ***Difficulty Level*** |  |

|  |  |
| --- | --- |
| ***Question 40*** | In the eqn. constant, the unit of a is |
| ***A*** | dyne |
| ***B*** | dyne |
| ***C*** | dyne/ |
| ***D*** | dyne |
| ***Correct Answer*** |  |
| ***Explanation*** |  |
| ***Difficulty Level*** |  |

|  |  |
| --- | --- |
| ***Question 41*** | The dimensions of Reynold's constant are |
| ***A*** |  |
| ***B*** |  |
| ***C*** |  |
| ***D*** |  |
| ***Correct Answer*** |  |
| ***Explanation*** |  |
| ***Difficulty Level*** |  |

|  |  |
| --- | --- |
| ***Question 42*** | Which of the following do not have the same dimensional formula as the velocity? Given that permeability of free space, permittivity of free space, frequency, wavelength, pressure, r density, angular frequency, wave number, |
| ***A*** |  |
| ***B*** | nl |
| ***C*** |  |
| ***D*** |  |
| ***Correct Answer*** |  |
| ***Explanation*** |  |
| ***Difficulty Level*** |  |

|  |  |
| --- | --- |
| ***Question 43*** | Unit of magnetic moment is |
| ***A*** | ampere-metre |
| ***B*** | ampere-metre |
| ***C*** | weber-metre |
| ***D*** | weber/metre |
| ***Correct Answer*** |  |
| ***Explanation*** |  |
| ***Difficulty Level*** |  |

|  |  |
| --- | --- |
| ***Question 44*** | An experiment is performed to obtain the value of acceleration due to gravity by using a simple pendulum of length L. In this experiment time for 100 oscillations is measured by using a watch of 1 second least count and the value is 90.0 seconds. The length is measured by using a meter scale of least count 1 mm and the value is 20.0 cm . The error in the determination of would be: |
| ***A*** |  |
| ***B*** |  |
| ***C*** |  |
| ***D*** |  |
| ***Correct Answer*** |  |
| ***Explanation*** |  |
| ***Difficulty Level*** |  |

|  |  |
| --- | --- |
| ***Question 45*** | The dimensional formula for magnetic flux is |
| ***A*** |  |
| ***B*** |  |
| ***C*** |  |
| ***D*** |  |
| ***Correct Answer*** |  |
| ***Explanation*** |  |
| ***Difficulty Level*** |  |

|  |  |
| --- | --- |
| ***Question 46*** |  |
| ***A*** |  |
| ***B*** |  |
| ***C*** |  |
| ***D*** |  |
| ***Correct Answer*** |  |
| ***Explanation*** |  |
| ***Difficulty Level*** |  |

|  |  |
| --- | --- |
| ***Question 47*** |  |
| ***A*** |  |
| ***B*** |  |
| ***C*** |  |
| ***D*** |  |
| ***Correct Answer*** |  |
| ***Explanation*** |  |
| ***Difficulty Level*** |  |

|  |  |
| --- | --- |
| ***Question 48*** |  |
| ***A*** |  |
| ***B*** |  |
| ***C*** |  |
| ***D*** |  |
| ***Correct Answer*** |  |
| ***Explanation*** |  |
| ***Difficulty Level*** |  |

|  |  |
| --- | --- |
| ***Question 49*** |  |
| ***A*** |  |
| ***B*** |  |
| ***C*** |  |
| ***D*** |  |
| ***Correct Answer*** |  |
| ***Explanation*** |  |
| ***Difficulty Level*** |  |

|  |  |
| --- | --- |
| ***Question 50*** |  |
| ***A*** |  |
| ***B*** |  |
| ***C*** |  |
| ***D*** |  |
| ***Correct Answer*** |  |
| ***Explanation*** |  |
| ***Difficulty Level*** |  |