|  |  |
| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | A capacitor of capacitance C charged by an amount Q is in parallel with an uncharged capacitor of capacitance 2C. The final charges on the capacitors are |
| ((OPTION\_A)) | Q/4, 3Q/4 |
| ((OPTION\_B)) | Q/5, 4Q/5 |
| ((OPTION\_C)) | Q/2, Q/2 |
| ((OPTION\_D)) | Q/3, 2Q/3 |
| ((CORRECT\_CHOICE)) (A/B/C/D) | D |
| ((EXPLANATION)) (OPTIONAL) |  |

|  |  |
| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | Young’s modulus of a perfect rigid body is |
| ((OPTION\_A)) | Between zero and unity |
| ((OPTION\_B)) | Zero |
| ((OPTION\_C)) | Unity |
| ((OPTION\_D)) | infinity |
| ((CORRECT\_CHOICE)) (A/B/C/D) | D |
| ((EXPLANATION)) (OPTIONAL) |  |

|  |  |
| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | de Broglie wavelength associated with electron of hydrogen atom in its ground state |
| ((OPTION\_A)) | 10A0 |
| ((OPTION\_B)) | 0.3A0 |
| ((OPTION\_C)) | 3.3A0 |
| ((OPTION\_D)) | 6.2A0 |
| ((CORRECT\_CHOICE)) (A/B/C/D) | C |
| (EXPLANATION)) (OPTIONAL) |  |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | If E and B represents electric and magnetic field vectors of an electromagnetic wave, the direction of propagation of the wave is along |
| ((OPTION\_A)) | E |
| ((OPTION\_B)) | B |
| ((OPTION\_C)) | EXB |
| ((OPTION\_D)) | BXE |
| ((CORRECT\_CHOICE)) (A/B/C/D) | C |
| ((EXPLANATION)) (OPTIONAL) |  |

|  |  |
| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | In an adiabatic expansion of an ideal gas the product of pressure and volume |
| ((OPTION\_A)) | At first increases and then decreases |
| ((OPTION\_B)) | Decreases |
| ((OPTION\_C)) | Increases |
| ((OPTION\_D)) | Remains constant |
| ((CORRECT\_CHOICE)) (A/B/C/D) | B |
| ((EXPLANATION)) (OPTIONAL) |  |

|  |  |
| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | In series LCR circuit, the power dissipation is through |
| ((OPTION\_A)) | R |
| ((OPTION\_B)) | L |
| ((OPTION\_C)) | C |
| ((OPTION\_D)) | Both L and C |
| ((CORRECT\_CHOICE)) (A/B/C/D) | A |
| ((EXPLANATION)) (OPTIONAL) |  |

|  |  |
| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | The strength of earth’s magnetic field is |
| ((OPTION\_A)) | Constant everywhere |
| ((OPTION\_B)) | Zero everywhere |
| ((OPTION\_C)) | Having very high value |
| ((OPTION\_D)) | Varying from place to place on the earth surface |
| ((CORRECT\_CHOICE)) (A/B/C/D) | D |
| ((EXPLANATION)) (OPTIONAL) |  |

|  |  |
| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | Correct Biot-Savarts law in vector form is |
| ((OPTION\_A)) | dB= (µ0/4π) [I(dlxr)]/r2 |
| ((OPTION\_B)) | dB=( µ0/4π) [I(dlxr)]/r3 |
| ((OPTION\_C)) | dB= (µ0/4π) [I(dl)]/r2 |
| ((OPTION\_D)) | dB= (µ0/4π) [I(dl)]/r3 |
| ((CORRECT\_CHOICE)) (A/B/C/D) | B |
| ((EXPLANATION)) (OPTIONAL) |  |

|  |  |
| --- | --- |
| ((MARKS)) (1/2/3...) | 1 |
| ((QUESTION)) | A plane wave front of wavelength **˄** is incident on a single slit of width a, the angular width of the principal maximum is |
| ((OPTION\_A)) | **˄/**a |
| ((OPTION\_B)) | 2**˄/**a |
| ((OPTION\_C)) | a/**˄** |
| ((OPTION\_D)) | a/2**˄** |
| ((CORRECT\_CHOICE)) (A/B/C/D) | A |
| ((EXPLANATION)) (OPTIONAL) |  |