

BOARD OF INTERMEDIATE & SECONDARY EDUCATION, SAHRAWAL

SUBJECT: Physics EXAM HSSC (2nd Annual) 2022 CLASS: XI
GROUP: I DATE: 21/12/22

(GENERAL INSTRUCTIONS FOR MARKING KEY)

Question No.2:

- i) One mark for writing three frontiers, one mark for writing the areas i.e. extremely large, extremely small objects, middle sized objects
- ii) Two marks for writing two causes i.e. Random error due to unknown reason, systematic error due to faulty instrument, personal error etc.
- iii) Two marks for writing two drawbacks i.e. Air resistance, temperature and variation in g due to altitude
- iv) $S = ut = 3 \times 10^8 \times 365 \times 86400 = 3.1536 \times 10^{16} \text{ ms}$ (Two marks for calculation and answer)

v) One mark for each definition and example.

vi) Two marks for derivation of $F = (\frac{m}{t})v$ using the relation $F = \frac{mv_f - mv_i}{t}$

vii) One mark for each definition

viii) One mark for telling minimum speed at highest point, one mark for telling maximum speed at launch/landing point.

ix) Two marks for telling either by qualitative means or by quantitative means or by definition/2nd law

x) Two marks for telling four processes of Carnot's cycle.

xi) $\langle v \rangle = \frac{v+(-v)}{2} = 0$ and $\langle v^2 \rangle = \frac{v^2+(-v)^2}{2} = v^2 \neq 0$, one mark for each explanation (mathematically or qualitatively).

xii) One mark for telling "yes", one for telling adiabatic expansion $\Delta U = W$

Question No.3:

- i) Two marks for telling three conditions i.e. $\vec{A}_1 = \vec{O}$, $\vec{A}_2 = \vec{O}$ or $\theta = 0^\circ, 180^\circ$
- ii) No, moment arm is zero. One for telling No, one for telling reason.
- iii) Two for proving by using parallelogram law
- iv) One mark for definition, one for telling two examples.
- v) One mark for writing fermentation, one mark for writing combustion.
- vi) Two marks for writing $P.E. \rightarrow K.E \rightarrow \text{Sound} + \text{Heat} + \text{Breaking/Dissociation energy}$

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RE-CHECKED BY _____ نے درج بالا سوالیہ پرچہ (انتظامیہ + معروضی) اور ہدایات کے حوالے سے مکمل طور پر تہیہ کر لی ہے۔ کسی قسم کی کوئی غلطی نہ ہے۔

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