**PHYSICS PAPER 1**

**MARKING SCHEME-MUHORONI DISTRICT.**

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|  | **SECTION A** | 12. | - it is done within elastic limit;  - k = f/e  = 10 = 20 = 30 = 40 =5;  8  6  4  2 |
| 1. | 5 + 0.5 + 12  100  5.62mm; | 13. | - Air at high speed reduces pressure inside the paper;  - Atmospheric pressure then pushes the tube inwards and collapses.; |
| 2. | Vol. = mass  Den  = 50.1  16.7  = 3cm3  New vol. = 3 + 15 = 18cm3  (must be shown) |  | Ft = m(v -u );  720 x 0.1 = 0.6 (v -0);  V = 720 x 0.1  0.6  = 120m/s; |
| V = rw;  = 8 x 2π x 33;  = 16.59m/s |
| 3. | Reduce / become less | 15. |
| 4. | At high altitude, atm. Pressure is less than the body’s pressure hence bleeding.; | **SECTION B**  (a) **Smoke particles** are hit/bombarded.  By unseen air molecules.;  Smoke particles also reflect/scatter light falling on them;  **LENS:** Focuses light to fall on the smoke cell.;;  **Microscope:** enables the bright specs to be seen against the grey background;;  (b) – Smoke particles scatter the light falling on them and so appear as bright points;  - The smoke particles move about in a continuous random movement because of uneven bombardment by the invisible molecules of air.;  (c) The smoke particles will move faster/with an increased speed. |
| 5. | They are being hit/ bombarded continually by the unseen water molecules; | 16. |
| 6.  Vol. cm3 | 9EC6EDF4  labelling ;  4 Temp (0C) ; ;  shape ; |  |
| 7. | Radiation; |  |
| 8. | Distance X1 should be reduced/ A should be brought nearer the metal blade than B.; |
| 9. | Dull black surface are better absolvers of heat than shinny surface; | 17. | (a) (i) A=vacuum;  B= silvered wall;  (b) Vacuum: minimize heat loss through conductor and convection.;  **Silvered wall:-** minimizes heat loss through radiation. |
| 10. | **F**  20cm  50cm    10cm    Clockwise moment = anticlockwise moment;  F x 70 = wt x30  0.6 x 70 = wt x 30;  Wt = 0.6 x 70  30  = 1260N; |  | **Cork:** = minimizes heat loss through evaporation.  (iii) B;  Air above liquid in A will absorb some heat through convection;  (b) Heat absorbed by melting ice  = mlf  = 40 x 340 000  1000  = 13600J;  Heat absorbed by melted ice to final temperature T  = 40 X 4200 x T  1000  = 168 T;  Heat absorbed by water in the calorimeter  = MCθ  = 400 X 4200 (20 – t)  1000  = 33600 - 1680 T;  Heat loss = heat gained  33600 - 1680T;  = 13600 + 168T;  1848T = 20,000  T = 10.820C; |
| 11. | - Black becomes more stable;  - COG is lowered; |  |

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| 19. | (a) when a boy is partially or totally immersed in a fluid, it experiences an upthrust equal to the weight of the liquid displaced,;  (b) (i) W = U + T;  (ii) W= density x volume x g;  = 10500 x 30 x 20 x 20 x 10  100 100 100  = 105 x 3 x2 x 2 x 10  = 126O N;  (iii) Wt of liquid displaced  = dvg  = 12000 x 30 x20 x 20 x10  100 100 100  = 12 x 3 x 2 x2  = 144;  (iv) T = w -u  = 1260 - 144  = 1116N  (c) Wt. of solid displaced = wt. of kerosene displaced.  = dvg  = 800 x 10 x 10;  1000000  = 0.08N;  Mass of kerosene displaced  = 0.08  10  = 0.008kg;  Density of the solid  = .008  50 x 10-6  = 160 kgm-3 | 18. | (a) Is a gas that obeys the gas laws completely.;  (b) (i) By carrying out the experiment in a room (where temp. is constant);  (ii) k = ∆P  ∆ 1/v  = (4.0 x 105) - (0)  (4.85 x 106) -(0)  = 4 x 10-1  = 4 x 10-1  = 0. 8247 x 10-1  = 8. 247 x 10-2  (iii) energy  (iv) allow air to adjust to room temperature;  (c) V1  V2;  T1  = T2  4000 = V2;  310 340  V2 = 4000 X 340;  310  = 4387 litres: |