**WB VOCLET 2013 Solved Paper Physics**

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| **VOCLET 2013 Solved paper Physics part** | |
| 1. The speed of light in a medium of refractive index 1.5 is:  a) 3x108 m/s  b) 2x108 m/s  c) 4.5x108 m/s  d) 1.5x108 m/s  Ans: b) 2x108 m/s | 2. A vessel contains oil (density=0.8g/cm3) over mercury (density=13.6g/cm3). A homogeneoussphere floats with half its volume immersed in mercury and other half in oil. The density of the material of the sphere in g/cm3:  a) 3.3 gm/cm8  b) 6.4 gm/cm8 c) 7.2 gm/cm8  d) 12.8 gm/cm8  Ans: c) 7.2 gm/cm8 |
| 3. A ray of light passes from vacuum into a medium of refractive index μ. If the reflected ray and the refracted ray are perpendicular to each other, the angel of incidence is:  a) tan-1μ  b) sin-1μ  c) cos-1μ  d) 2sin-1(μ/2)  Ans: a) tan-1μ | 4. A certain wire has resistance of 10 ohm. If it is stretched by 1/10th of its length then the resistance is nearly:  a) 9 ohm  b) 10 ohm c) 11 ohm  d) 12 ohm  Ans: c) 11 ohm |
| 5. A virtual image is formed by a convex lens when the object lies:  a) on focus  b) between f and 2f  c) within focus and pole  d) between 2f and infinity  Ans: b) between f and 2f and d) between 2f and infinity | 6. Equivalent resistance between A and B is : a) 9 Ω  b) 4 Ω c) 7 Ω  d) 5Ω  Ans: c) 11Ω |
| 7. A boat takes 2 hours to travel 8km and back in still water. If the velocity of water is 4 km/hr, the time taken for going upstream 8 km and coming back is :  a) 2 hr  b) 2 hr 40 min  c) 1 hr 20 min  d) 4 hr  Ans: b) 2 hr 40 min | 8. The work done by a lifting machine in lifting a load of 100 kg to the top of building of height 20 m is (g=9.8 m/s2) :  a) 0.196 x 103J  b) 1.196 x 103J c) 19.6 x 103J  d) 196.0 x 103J  Ans: c) 19.6 x 103J |
| 9. The S.I unit of magnetic flux is :  a) weber/m^2  b) amp-m^2  c) weber  d) volt  Ans: c) weber | 10. A cork of specific gravity 0.8 is taken under water (sp. gr.=1) and relesed. THe upward acceleration of the cork is :  a) g  b) g/2 c) g/4  d) g/6  Ans: c) g/4 |
| 11. Two body of masses mA and mB (mA> mB) and momentum PA and PB respectively have the same kinetic energy (KE). Then :  a) PA = PB  b) PA < PB c) PA > PB  d) PA ≈ PB (≈ approximately equal to)  Ans: c) PA > PB | 12. The power of a concave lens of focal length 20 cm is :  a) +5.0 D  b) -5.0 D c) +0.5 D  d) -0.5 D Ans: b) -5.0 D |
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| 13. The critical angle of light ray from medium A into medium B is θ. The speed of light in medium A is v. The speed of light in medium B is :  a) v/sinθ  b) v sinθ c) v/tanθ  d) v tanθ  Ans: a) v/sinθ | 14. A body, starting from rest and moving with a constant acceleration, covers a distance s1 in 2nd second and a distance s2in the 4th second. The ratio of s1/ s2 is :  a) 1/4  b) 3/7 c) 1/3  d) 5/9 Ans: b) 3/7 |
| 15. Four wires of the same material are stretched by the same load. The dimensions are given below. Which of them will elongate the most ?  a) length-100 cm, diameter-1mm  b) length-200 cm, diameter-2mm c) length-300 cm, diameter-3mm  d) length-400 cm, diameter-0.5mm  Ans: d) length-400 cm, diameter-0.5mm | 16. Energy per unit volume of a stretched wire is :  a) 1/2 x load x strain  b) load x strain c) stress and strain  d) 1/2 x stress x strain Ans: d) 1/2 x stress x strain |
| 17. Two rods of lengths l1 and l2 are made of materials whose co-efficient of linear expansion are α1 and α2. If the difference between the two lengths be independent of temperature :  a) l1/l2 = α1/α2  b) l1/l2 = α2/α1 c) l1^2 α1 = l2^2 α2 d) α1^2 /l1 = α2^2 / l2  Ans: b) l1/l2 = α2/α1 | 18. Which one of the following has highest persentage increase when a copper sphere is heated ?  a) length  b) area c) volume  d) diameter Ans: c) volume |
| 19. A metallic wire of resistance 12 Ω is bent to form a square. The resistance between the two diagonal points will be :  a) 12 Ω  b) 24 Ω c) 6 Ω d) 3 Ω  Ans: d) 3 Ω | 20. The co-efficient cubical expansion of a substance is 27x10-6 ° C-1. The increase in length of a rod of length 1 m of that substance for 1°C rise in temperature  a) 27x10-6 m  b) 27x10-6 cm c) 9x10-6 m d) 9x10-6 cm Ans: a) 27x10-6 m |
| 21. What must be the work done to produce 1K Cal heat ? : a) 4.2 J  b) 4.2 x 103 J c) 4.2 x 107 J d) none of the above  Ans: b) 4.2 x 103 J | 22. What is the minimum resistance that can be made by using ten 0.1 Ω resistors?  a) 1 Ω  b) 0.1 Ω c) 0.0001 Ω d) 0.01 Ω Ans: d) 0.01 Ω |
| 23. State which one of the following is correct ?  a) joule= coulomb x volt  b) joule= coulomb / volt c) joule= volt / ampere d) joule= volt x ampere Ans: a) joule= coulomb x volt | 24. The magnetic flux Φ (in weber) linked with a coil varies with time t (in second) according to the equation Φ=6t2-5t+1. The magnitude of the induced emf in coil at t=0.25 s is : a) 12 V  b) 8 V c) 6 V d) 2 V Ans: d) 2 V |
| 25. A conducting circular loop of redius r carries a constant current I. It is placed in an uniform magnetic field B such that B is perpendicular to the plane of the loop. The magnetic force acting on the loop is ?  a) BIr  b) 2ΠIrB c) Zero d) ΠIrB Ans: c) Zero | \*\* All answers are provided here according of my knowledge and some research on net. I would not want to supply any wrong answer, but no body is perfect. If you think any answer(s) provided here is/are wrong then please write the right answer in the comment box. I will be thankful to you. |