Swami Vivekananda Vidyala Matric Hr.Sec.School - Kuduvai

CLASS: XII +2 Volume II Inside one Mark SUB: PHYSICS MARKS: 50

1. Geometrical Centre of the mirror is Called ____
a] Principal axis b] Focus c] Pole

2. Pure water has refractive index 1.33, what is the speed of light through it?
a] $2.26 \times 10^8 ms^{-1}$ b] $2.36 \times 10^8 ms^{-1}$ c] $2.46 \times 10^8 ms^{-1}$ d] $2.16 \times 10^8 ms^{-1}$

3. The Critical angle of diamond is ____
a] 34.4° b] 24.4° c] 24.8° d] 14.4°

4. Endoscope work on the phenomenon of ____
a] refraction b] reflection c] Total Internal reflection

5. The unit of Power of lens is ____
a] Positive b] negative c] radian d] dioptre

6. The final image Produced by a Simple microscope is ____
a] real and erect b] real and inverted c] Virtual and erect d] Virtual and inverted

7. The focal length of a lens is 150 cm. Its Power is ____
a] 6.7 D b] 1.5 D c] 0.67 D d] 0.5 D

8. The intensity of Rayleigh Scattering is ____
a] $I \propto \lambda^2$ b] $I \propto \lambda^4$ c] $I \propto \frac{1}{\lambda^4}$ d] $I \propto \lambda^6$.

9. Two lenses have Powers +1D and −2D respectively. The Power of their Combination is ____
a] +2D b] −3D c] −1D d] +1D

10 A monochromatic light is incident on an equilateral Prism at an angle 30° and emerges at an angle of 75°. The angle of deviation produced by the Prism is ——

a] 45° b] 35° c] 72° d] 105°

11 —— is a discrete Packet of Energy

a] Mesons b] Pions c] photons d] electrons

12 Two light Source have intensity of light as I_0. What is the resultant intensity at a Point where the two light waves have a phase difference of $\pi/3$?

a] I_0 b] $2I_0$ c] $3I_0$ d] $4I_0$

13 Dazzling Colours are exhibited by Thin films of oil spread on the surface of water and also by soap bubbles These Colours are due to interference of white light undergoing ——

a] reflection b] refraction c] Multiple reflection.

14. —— diffraction is Light wave is from a Source at infinity

a] Fresnel b] Fraunhofer c] Interference

15 —— is the natural Polarising material

a] Tourmaline b] quinine iodosulphate

c] Polyvinyl alcohol

16 The refractive index of glass 1.5. Find the polarising angle ——

a] 46.3° b] 56.3° c] 66.3° d] 76.3°

17 ___ is the example of uniaxial crystals
a] mica b] topaz c] Selenite d] Calcite

18 In Nicol Prism the two halves are pasted together with a layer of ___ a transparent cement
a] quartz b] Selenite c] Canada balsam

19. The eye is least strained when the image is formed at near point ___
a] 2.5 cm b] 25 cm c] 0.25 cm d] 25 mm

20 Astigmatism can be corrected by ___ lens
a) Convex b] Concave c] bifocal d] cylindrical

21. Calculate the power of the lens of the spectacles needed to rectify the defect of nearsightedness the person who would see clearly up to a distance of 1.8 m
a] P = −0.56D b] P = −0.46D c] P = −0.58D d] P = −0.66D

22 Work function is measured by ___
a] Volt b] Ampere c] eV d] μA

23 A photo cell device which converts light energy into ___
a] Mechanical energy b] Electrical Energy c] quanta

24. The radiation produced from decelerating electron is called ___
a] breaking radiation b] x-ray spectrum
c] Continous spectrum

25. Emission of electron by absorption of heat energy is called ___ emission.

[4]

a] photoelectric b] field c] Thermionic d] Secondary

26. 1 eV is equal to ____ a] 1.655×10^{-19} J b] 1.602×10^{-19} J c] 1.502×10^{-19} J

27. Duane – Hunt formula is — a] $\frac{12.27}{\sqrt{V}}$ Å b] 4.14 eV c] $\lambda_0 = \frac{12400}{V}$ Å

28. Millikan's oil drop experiment a fine droplet of highly viscous non volatile liquid ____

a] Honey b] glycerine c] Coconut oil d] water

29. Size of nucleus in Centre the order of ____

a] 10^{-9} m b] 10^{-10} m c] 10^{-14} m d] 10^{-15} m

30. Calculate the radius of $^{197}_{79}Au$ nucleus ____

a] R = 5.67F b] R = 6.97F c] R = 4.67F d] 3.67F

31. Atom bomb is an example of ____ reaction

a] Nuclear fission b] Nuclear fusion c] chain reaction.

32. In nuclear reactor ____ is used as moderator

a] Uranium b] Polonium c] Graphite d] Lead.

33. 1 Curie is equal to ____

a] 2.7×10^{10} Bq b] 3.7×10^{10} Bq c] 4.7×10^{10} Bq d] 4.7 Bq

34. The radius of the 5th orbit of hydrogen atom is 13.25 Å Calculate the de Broglie wavelength of e^-ns orbiting in the 5th orbit ____

a] $\lambda = 16.64$ Å b] $\lambda = 15.54$ Å c] $\lambda = 14.44$ Å d] $\lambda = 13.4$ Å

35. The wavelength of spectral lines of Lyman series which lies in the ____ region

a] Balmer series b] UV region c] IR region d] Visible

36. Radioactive $^{14}_{6}C$ whose half-life is ___ yrs
a] 5730 yrs b] 5740 yrs c] 5750 yrs d] 5780 yrs

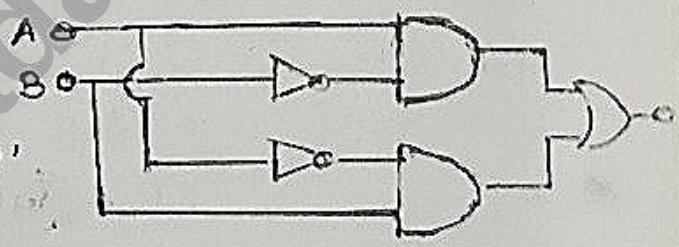
37. The value of forbidden energy gap for Germanium at room temperature ___
a] 0.6 eV b] 0.7 eV c] 0.8 eV

38. The impurity atoms are called ___
a] Acceptor b] valency c] dopants d] Diode

39. The example of trivalent impurity is ___
a] Boron b] Silicon c] Germanium d] Phosphorus

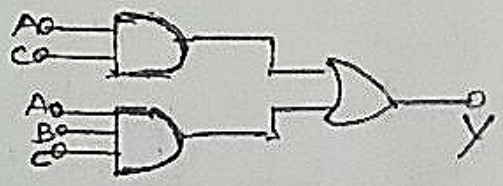
40. In a transistor connected in common base configuration $\alpha = 0.95$, $I_E = 1mA$ calculate I_C = ___
a] 0.90mA b] 0.95mA c] 0.80mA d] 0.85mA

41. In the combination of following gates, write the Boolean eqn for output y' in terms of inputs A & B



a] $Y = \overline{A}.B + \overline{AB}$ b] $Y = A.\overline{B} + \overline{A}.B$ c] $Y = \overline{A+B}$

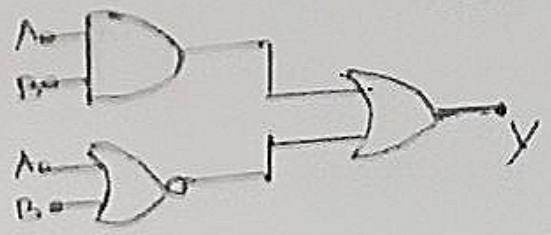
42. Write down Boolean Equation for the output y of the given circuit.



a] $Y = AC + ABC$ b] $Y = A \oplus B$ c] $Y = \overline{A.B}$

43. Prove the following Boolean expression using the laws and theorems of Boolean algebra $A(\overline{A}+B) = ?$
a] $\overline{AB}$ b] AB c] A d] $\overline{A+B}$

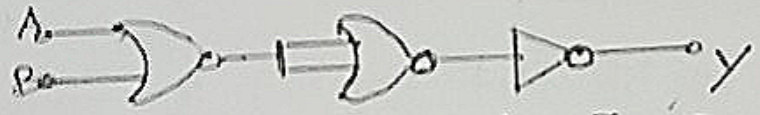
44. Write down Boolean expr for the output y of the given circuit and give its truth table



a) $y=(\overline{AB})+(A+B)$ b) $y=(AB)+(\overline{A+B})$ c) $y=ABC+\overline{AB}$

45. The audio frequency range is ——
a) 20Hz to 200kHz b) 20Hz to 20kHz c) 20Hz to 2MHz

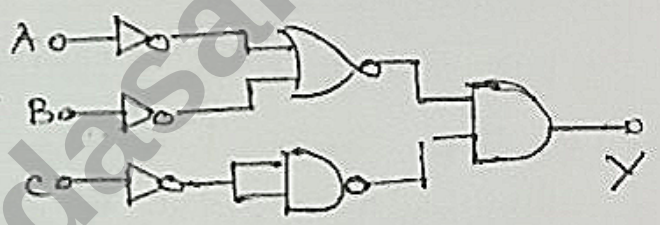
46. The given electrical network is equivalent to ——



a) NAND gate b) NOR gate c) NOT gate d) EX-OR gate

47. A Transistor has $\alpha = 0.95$ then $\beta = ?$
a) 1/19 b) 19 c) 1.5 d) 0.95

48. Write the output (y) Boolean expression for the following circuit with inputs A, B and C



a) $y=A+BC$ b) $y=A+B+C$ c) $y=ABC$ d) $y=\overline{ABC}$

49. If the particle of a solid is of size less than 100 nm, it is said to be a ——
a) nano solid b) bulk solid c) gluons.

50. The strongest source of gravitational waves is ——
a) black holes b) accelerated mass c) god particle

ALL THE BEST

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ANSWERS

1. c] Pole
2. a] $2.26\times10^{8}\ ms^{-1}$

$n=\frac{c}{v}$, $v=\frac{c}{n}$

$v=\frac{3\times10^{8}}{1.33}=2.26\times10^{8}\ ms^{-1}$

3. b] 24.4°
4. c] Total Internal reflection
5. d] Diptre
6. c] Erect & Virtual
7. c] 0.67 D
8. c] $I\propto\frac{1}{\lambda^4}$
9. c] −1D
10. a] 45°
11. c] photons
12. c] $3I_0$
13. c] Multiple reflection
14. b] Fraunhofer
15. a] Tourmaline
16.
17. d] Calcite
18. c] Canada balsm
19. b] 25 cm
20. d] cylindrical
21. a] $P=-0.56D$
22. c] eV.
23. b] Electrical Energy
24. a] Breaking radiation
25. c] Thermonic
26. b] 1.602×10^{-19} J
27. c] $\lambda_0=\frac{12400}{V}$ A°
28. b] glycerine
29. c] 10^{-14} m
30. b] R=6.97F
31. a] Nuclear fission
32. c] Graphite.
33. b] 3.7×10^{10} Bq
34. a] $\lambda=16.64$ A°
35. b] UV region
36. a] 5730 yrs
37. b] 0.7 eV
38. c] dopants
39. a] boron
40. a] 0.95 mA

$\alpha=I_C/I_B$

$I_C=\alpha I_B$

$=0.95\times1$

$=0.95$ mA

47. b] 19

$\beta=\frac{\alpha}{1-\alpha}\Rightarrow\frac{0.95}{1-0.95}$

$\Rightarrow\frac{0.95}{0.05}$

$\Rightarrow 19.$

48. b] $Y=A\bar{B}+\bar{A}B$
42. a] $AC+ABC$
43. b] AB
44. b] $Y=(AB)+\overline{A+B}$
45. b] 20 Hz to 20 kHz
46. b] NOR gate
48. c] $Y=ABC$
49. a] Nano Solid
50. a] Black holes

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