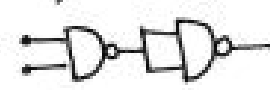
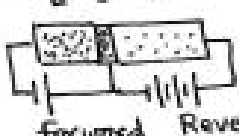



PACE-IIT & MEDICAL

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EDT - 8 - (2018 Aspirants) - Solution

Communication, Semiconductor devices, simple circuits

1. (3) KE become zero.
2. (3) In conductor the time of impact \propto decreases i.e. time betⁿ two collisions the free e^- increases but increase in number is less than the decrease in time. for semi conductor the time decreases but here there is good amt. of increase in free e^- .
3. (3); 4 (1); 5 (1);
6.  (3) be careful about option
7. (2).
8. The fields due to p-n and applied will be in opp. dirⁿ hence (1)
9. (1). E B C the e^- of "E" will move to base and then from base to collector

 forward Reverse
10. (4); 11 (3) as connected in parallel called as shunt.
12. (1); 13. (2) . 14 (1) two way
15. (1); 16. (1) in full wave rectifier out put freq. is double of input and in half wave remains same.
17. (4) out of phase
18. (3); 19. $\beta = \frac{\alpha}{1-\alpha} \Rightarrow \frac{.95}{.05} = 19$ (2)
- 20 (4) modulation index = $\frac{E_{max} - E_{min}}{E_{max} + E_{min}} \%$
 $\therefore m_i = \frac{24-8}{24+8} \times 100 \% = 50\%$
21. (1); 22. (3) as D₁ will not conduct hence 2 Ω will contribute
 $\therefore \frac{12}{6} = 2A$ (again think of option)
23. (1). 24. (1) $\alpha = \frac{\Delta I_c}{\Delta I_E}$;
 $\Delta I_c = 0.95 \times 100 \times 10^{-3} = 0.95 \times 10^{-1}$
 hence $95 \times 10^{-3} A = 95 mA$.
25. (3) for conductor $E_g = 0 eV$ for semiconductor $\approx 1 eV$ and for insulator 3 to 15 eV.
26. (1) Use ans and check.
27.  these are seven. (4)
28. 6V will make diode reverse bias hence current is zero.
 (1)
29. (4). $R_{in} = 100 \Omega$; $I_B = 40 \mu A$.
 $I_c = 2 mA$; R_C or $R_L = 4 k\Omega$
 $V_{in} = R_{in} \times I_B = 100 \times 40 \times 10^{-6}$
 $= 40 \times 10^{-4} V$
 $V_{out} = R_L \times I_c = 4 \times 10^3 \times 2 \times 10^{-3} = 8V$
 $Gain = \frac{V_{out}}{V_{in}} = \frac{8}{40 \times 10^{-4}} = 2000$.
30. (4); 31 (1) as $e^- > \text{hole}$
32. (2); $I_E = I_B + I_c$ hence.
33. (4) $\beta = \text{current gain} = \frac{I_c}{I_B}$
- 34 (3). 35 (3) 36 (2)
- 37 (2). 38. (3); 39 (2), 40. 1, 1, 1
 or 1, 0, 1 or 0, 1, 1 () 41. (2).
42. (2); 43. (4) 44. (3)
45. (1).

Q46. ~~4~~ Benzidine is not amino acid.

Q47. ④

Q48. ③
 $\text{Glucose} + \text{O}_2 \xrightarrow{\text{AT}_2/\text{water}} \text{Gluconic acid}$
 $\downarrow \text{dil. HNO}_3$
 Saccharic acid

Q49. ④ It is actually monosaccharide

Q50. ①

Q51. ① Linkage of C_1 of one $\beta\text{-D-Glucopyranose}$ + C_6 of another $\beta\text{-D-Glucopyranose}$

Q52. ① $\text{Glucose} \xrightarrow{\text{O}_2} \begin{matrix} \text{COOH} \\ | \\ (\text{CHOH})_4 \\ | \\ \text{CH}_2\text{OH} \end{matrix} \quad (\text{C}_6\text{H}_{12}\text{O}_7)$
 Gluconic acid

Q53. ① 2 moles of glucose

Q54. ② sorbitol \rightarrow $\begin{matrix} \text{CH}_2\text{OH} \\ | \\ \text{H}-\text{C}-\text{OH} \\ | \\ \text{H}-\text{C}-\text{OH} \\ | \\ \text{H}-\text{C}-\text{OH} \\ | \\ \text{CH}_2\text{OH} \end{matrix}$

Q55. ③ at iso electr. pt. C_3OH

Q56. ③ Q57. ① Lactose

Q58. ① $\begin{matrix} \text{CH}_2\text{OH} \\ | \\ \text{H}-\text{C}=\text{O} \\ | \\ \text{H}-\text{C}-\text{H} \\ | \\ \text{H}-\text{C}-\text{OH} \\ | \\ \text{H}-\text{C}-\text{OH} \\ | \\ \text{CH}_2\text{OH} \end{matrix}$ total 7 C-H bonds

Q59. ② Q60. ① Q61. ②, ④

Q62. ① An epimer (isomer) that differ in configuration at any single stereogenic center called as Anomer.

Q63. ①

Q64. ③ cystein contains $\text{SH}-\text{CH}_2-$

Q65. ④ Q66. ②

Q67. ① vit. A, D, E & K \Rightarrow fat soluble

Q68. (2) Q69. (3) α -D-Glucose & β -D-Fructose

Q70. (3) Q71. (1) Q72. (2) Q73. (1)

Q73 (1) \rightarrow sucrose is a non-reducing sugar because it has no free aldehyde or keto gr.

Q74. (2) Q75. (2) Q76. (1)

Q77. (3) Stachyose $\xrightarrow{\text{hydrolysis}}$ 1 molecule Glucose + 1 Fructose + 2 molecules of Galactose

Q78. (4) Raffinose $\xrightarrow{\text{hydrolysis}}$ Galactose + Glucose + fructose

Q79. (4) Q80. (3) Q81. (3) Q82. (4)

Q83. (3) Q84. (1) Q85. (3)

Q86. (4) Q87. (3)

Q88. (3) its configuration

Q89. (1)

Q90. (2) α -D-Glucopyranose (trans)

