NATIONAL TALENT SEARCH EXAMINATION-2018-19, JHARKHAND

SCHOLASTIC APTITUDE TEST (SAT) HINTS & SOLUTIONS

3. F = q V B
He---> q_{max} --->f_{max}

7. convex mirror always forms a virtual and erect image.

9. deviation $\delta = (\mu - 1)A$.
for no deviation by two prisms, deviation by each prism must be equal and opposite.
$|\delta_1| = |\delta_2|$
$(\mu_1 - 1)\, p_1 = (\mu_2 - 1)\, p_2$
$P_2 = (\mu_1 - 1)/(\mu_2 - 1)\ P_1$
$P_2 = (1.54-1)/(1.72-1)\ p \times 4^\circ = 3^\circ$

14. fe + dil. HCl $\longrightarrow$ $feCl_2 + H_2\uparrow$

15. H_2CO_3 is an inorganic acid.

16. Limus $\longrightarrow$ in acidic medium $\longrightarrow$ Red
Methyl orange $\longrightarrow$ in acidic medium $\longrightarrow$ Red

17. pH of curd $\longrightarrow$ between 4.5 to 5.5

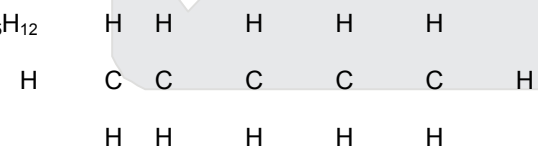
18. Bleaching powder.
$Ca(OH)_2 + Cl_2 \longrightarrow CaOCl_2$

19. XO $\longrightarrow$ neutral X $\longrightarrow$ carbon $XO_2 \longrightarrow$ acidic

20. Reactivity series Li, K, Ba, Na, Ca, Mg, Al, Zn, Fe, Ni, Sn, Pb, H, Cu, Hg, Ag, Au, Pt
$CuSO_4$ + fe $\longrightarrow$ No reaction

21. No. of proton $\longrightarrow$ 8
$X^{2-} \longrightarrow$ no. of $e^- \longrightarrow$ 10

22. C_5H_{12}



no. of covalent bond $\longrightarrow$ 16

24. Na $\longrightarrow$ 1
P $\longrightarrow$ 5
Si $\longrightarrow$ 4
Al $\longrightarrow$ 3

25. $CH_3COOH + Na_2CO_3 \longrightarrow CH_3COONa + H_2O + CO_2\uparrow$
brisk effervescence occurred.

26. Be
Mg
Ca

41. $x + (x-1)+ (x+2)+ (x+3)+ (x+4) = 170$
$5x+1+2+3+4 = 170$
$5x +10 = 170$
$5x = 160$
$x =32$
$32 \times 36 = 1152$

42. HCF x LCM = axb
$15x225 = a \times 75$
$a = 45$

43. LCM of 240 & 112 is 16
16000 cc

44. $2^{x-1} + 2^{x+1} = 2560$
$2^x/2 + 2^x.2 = 2560$
$2^x(1/2+2) = 2560$
$2^x (5/2) = 2560$
$2^x = 1024$
$x = 10$

45. 6-{9-{18-(15-3)
6-[9-{18-12
6-[9-6
6-3 = 3

46. $(a+b)^2/(a-b)^2 = 234+216/ 234-216 =450/18 = 25$
$(a+b)/(a-b) = 5$

47. 36a x 36x b = 12960
ab = 12960/36 x 36 =10
1, 10/2, 5

48. x X 100 + (170-n) x 50 = 10000
100 n + 170 x 50 -50n = 10000
50 n = 10000-8500
50 n = 1500
n= 1500/50 = 30
140x 50 = 7000

49. 5n - 3n = 12
zn = 12
n = 6
6 x 5 = 30 years

50. x X 5/9 X 60/100 = 2790
x = 2790 X 9 X 100/5 X 60
x= 8370

51. AB/AC = BD/DC
10/6 = BD/DC = 5/3
BD =5/8X 12 = 15/2 = 7.5

52. $x_1+x_2+x_3+x_4/4 = 7350$
$x_1+x_2+x_3/3 = 6500$
$x_4 = 7350 \times 4 -6500 \times 3 = 9900$

55. Let one angle be 'x'
another angle be '180-x'
ATQ, x-(180-x) = 20

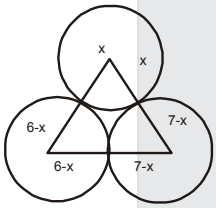
x-180+x = 20
2x = 200
x = 100
angles be 100, 80

56. 5 n = n x 5 x t/100
t = 100 years
11 n = n x 100 x R/100
R = 11 years

57. $\sin\theta = \cos^2\theta$
$\cos^2\theta + \cos^4\theta$
$\sin\theta + \sin^2\theta = 1$

58. $nx_M + {}_M x_w = 25 \times 2$
$x_M = 26 \times n$
$x_W = 21 \times m$

59. $\pi r^2 h \times 2/r = 2\pi rh$

60. 

6+7-2x = 5 x = 4