NATIONAL TALENT SEARCH EXAMINATION-2018-19, ODISHA

<u>SCHOLASTIC APTITUDE TEST (SAT) HINTS & SOLUTIONS</u>
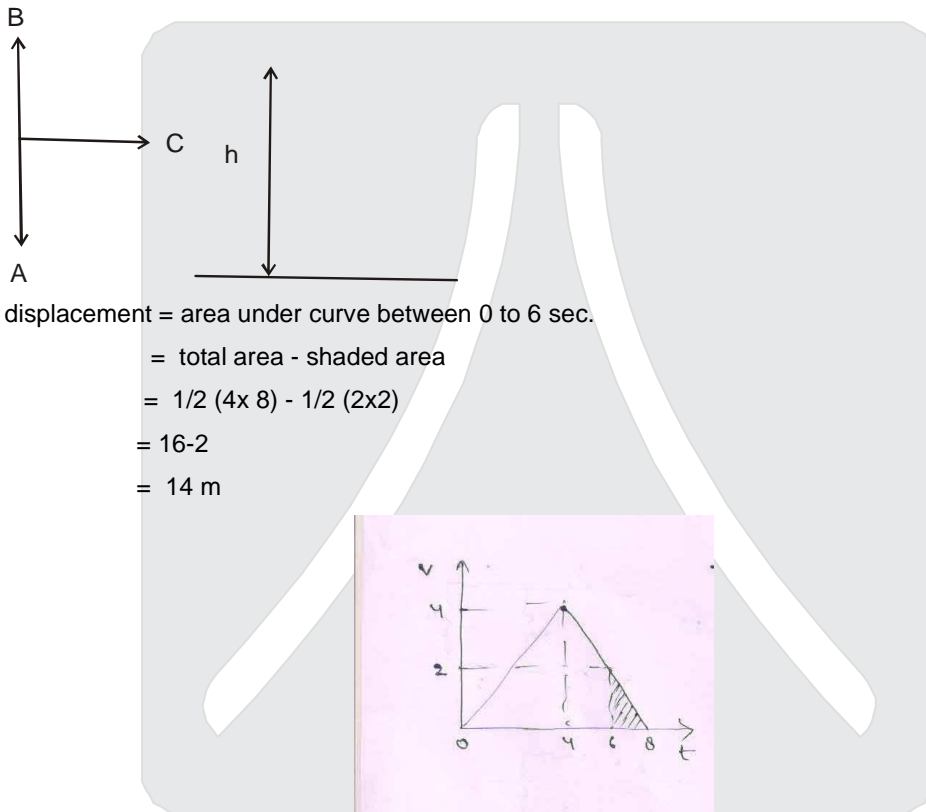
1. R. I of medium is more so nature change.

2. $h = u\, t_A + 1/2\, g t_A^2$

   $h = -u\, t_B + 1/2\, g t_B^2$

   $h = 1/2\, g t c^2$

   by solving all three equations

   B

   C h

   A

3. displacement = area under curve between 0 to 6 sec.

   = total area - shaded area

   = $1/2\,(4 \times 8) - 1/2\,(2 \times 2)$

   = 16-2

   = 14 m

4. After to second

   $h = 1/2\, a\, t o^2$

   $v = a t o$ then packet is dropped for packet

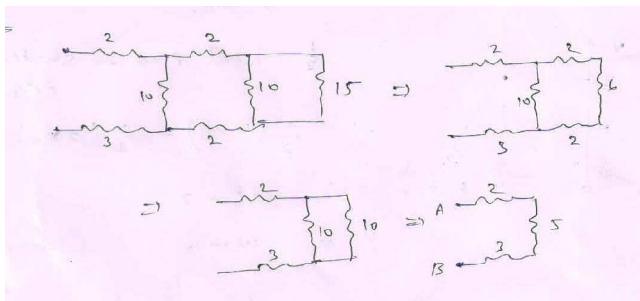 $u = 1/2\, a\, t o^2$

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   $h = ut + 1/2\, at^2$

   $1/2\, a\, t o^2 = (- a t o)\, t + 1/2\, g t^2$

   $g t^2 - 2(a\, t o)\, t - a\, t o^2 = 0$

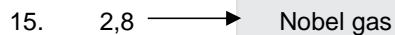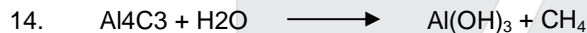by solving t = ato/g [1+1+g/a

5. No flux change, no current.

7.

8. Same force because characteristic length is same.

F = i (l x B)

12. Heat developed is same in both but temperature increase is depends on their specific heat.

13. By lenz law current direction is anticlockwise.

14. $Al_4C_3 + H_2O \longrightarrow Al(OH)_3 + CH_4$

15. 2,8 $\longrightarrow$ Nobel gas

Ar(18) $\longrightarrow$ 2,8,8 inert gas

16. at infinite distance from nucleus, energy of electron is zero

18. Aluminium is more reactive then chromium

19. CaO is formed which has high melting point.

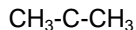22. $B(OH)_3$ is Boric acid, which releases H+ ion in water

25. Molarity = No. of moles of solute/ Volume in liter of solution

M = w/Gram Molecular mass X 1000/ V in ml

=4/40 x 1000/250 = 0.4 M

26.   O

         ||

CH_3-C-CH_3

Functional group is ketome

42. Profit = Investment x time

$P_A : P_B = I_A. T_A : I_B. T_B$

21:20 = 14 x12 : (15 x + 10 (12-x)

`   21/20 = 14 x 12/15x +120-10x

5x+120 = 160

5x = 40

x = 8

43. $5^{x-3} \times 3^{2x-8} = 225$

$5^x/5^3 \times 9^x/9^4 = 225$

$(45)^x = 225 \times 5^3 \times 9^4 = 9 \times 5 \times 5 \times 5^3 \times 9^4$

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44. $m[a + (m-1)d = n[a+(n-1)d$

$ma + (m^2-m)d = na + (n^2-n)d$

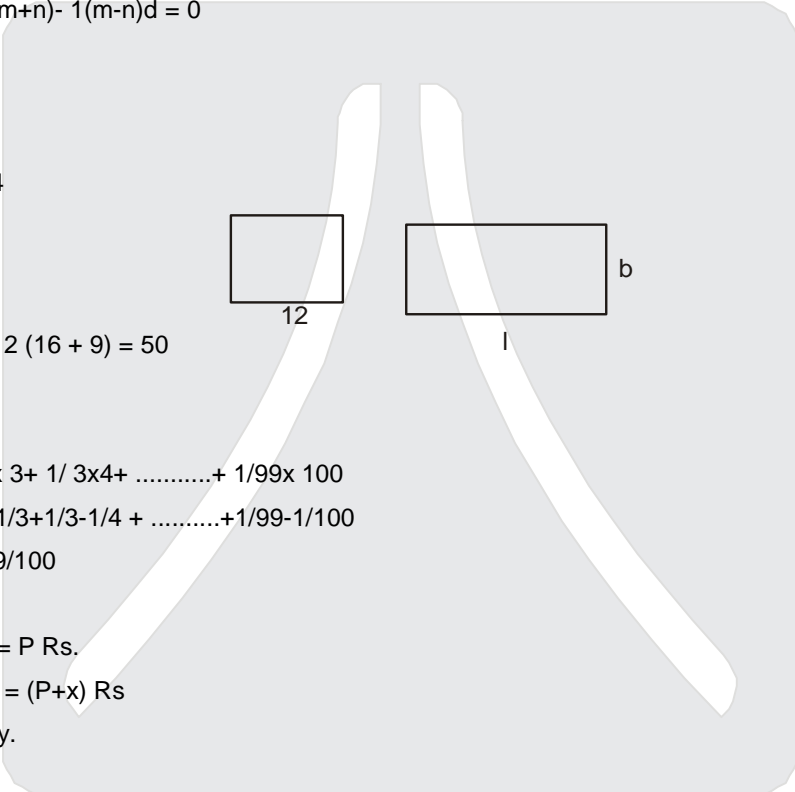$(m-n)a + [(m^2-n^2) - (m-n)d = 0$

$(m-n)[a + [(m+n) - 1(m-n)d = 0$

$T_{m+n} = 0$

45. $l \times b = 144$

$l(l-7) = 144$

$16 \times 9 = 144$

P = 2(l+b) = 2(16 + 9) = 50

46. $1/1 \times 2 + 1/2 \times 3 + 1/3 \times 4 + \ldots + 1/99 \times 100$

$1 - 1/2 + 1/2 - 1/3 + 1/3 - 1/4 + \ldots + 1/99 - 1/100$

$1 - 1/100 = 99/100$

49. Mohan has = P Rs.

Rakesh has = (P+x) Rs

P + P + x = y.

2P + x = y

2P = y-x

P = y-x/2

Rakesh's money = y-x/2 +x

= Y-x+2x/2 = y+x/2

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Head Office: Plot No. A-51 [A], IPIA, Near Resonance CG Tower **Contact : 0744-6635569**
Website :www.pccp.resonance.ac.in **| E-mail :** pccp@resonance.ac.in
Toll Free : 1800 258 5555 **| CIN:** U80302RJ2007PLC024029

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NATIONAL TALENT SEARCH EXAMINATION-2018-19, ODISHA

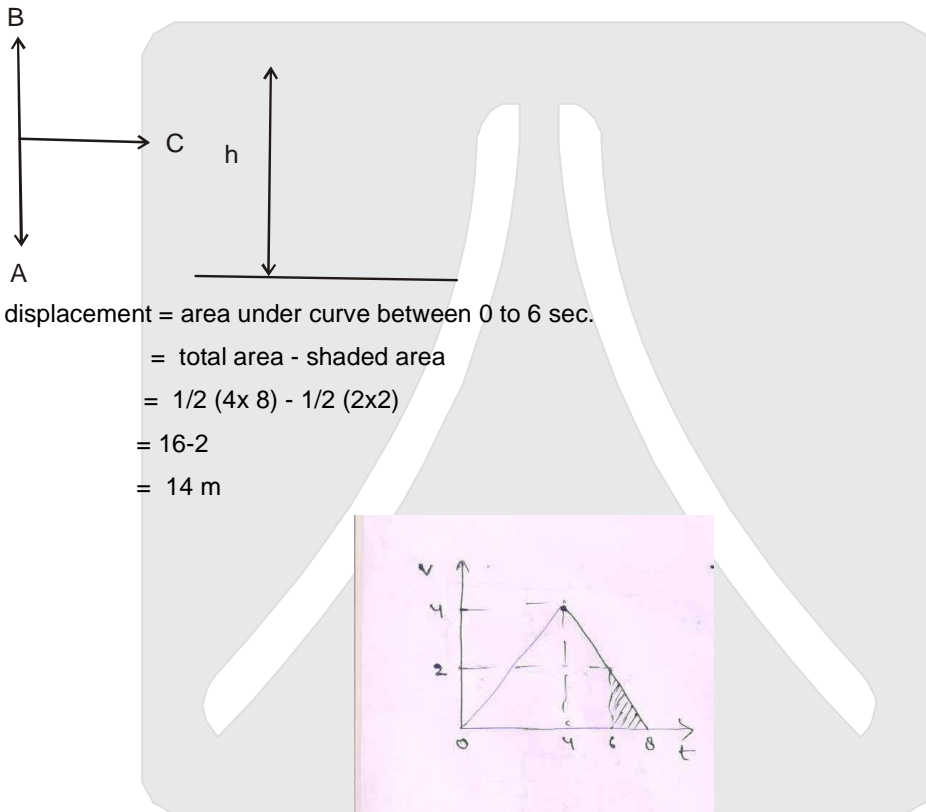## SCHOLASTIC APTITUDE TEST (SAT) HINTS & SOLUTIONS

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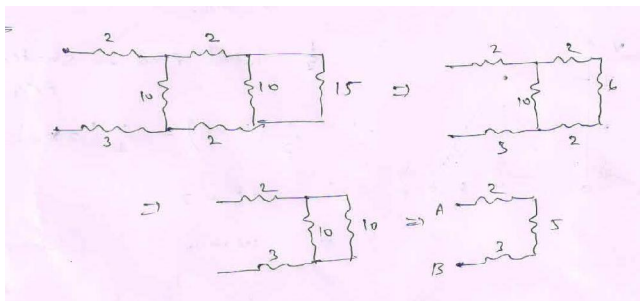
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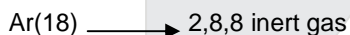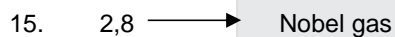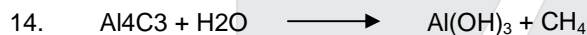

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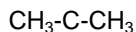22. B(OH)$_3$ is Boric acid, which releases H+ ion in water

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Website :www.pccp.resonance.ac.in | **E-mail :** pccp@resonance.ac.in   **SOL. SAT (ODISHA)**
Toll Free : 1800 258 5555 | **CIN:** U80302RJ2007PLC024029   **NTSE STAGE-I-2017-18 PAGE-210**

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NATIONAL TALENT SEARCH EXAMINATION-2018-19, ODISHA

MENTAL ABILITY TEST (MAT) HINTS & SOLUTIONS

13. $3(3/4n) = 1/4$ $n = 9$

17. $4 \times 1 = (4+1), (4 \times 1) = 54$

18. $387 = 12160/38 \times 100$ --->32000

19. $46\%01\%91.1N/42\%01.11\%01N = 46 \times 21/ 42 \times 11 = 23/11$

40. $5 \times 6 + 3 \times 3, 3 \times 4 + 5 \times 5$

41. +36, +36

52. BEAT: EHDW, ROAD : URDG

   +3   +3

53. N U M B E R ------ U N B M R E

54. 9,   4.5,   405,   6.75,   13.5 , ? 101.25

   x1/2   x1   x 3/2   x4/2   x5/2   x6/2

55. ADbc, EGfg, ILjK, MPno

56. zxu,   xvs,   ?,   TRo   (VTQ)

   -2   -2   -2

57. A4Z, D7W, ?, J19Q, M28N

   +3   +3   +3

66.

68.

69. 5:10 ---> $30 \times 5 + 10 \times 1/2 = 155°$

70.

Q ——→ P

R ——— S

76. F R I E N D   H U M J T K

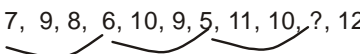C A N D L E   H U M J T K
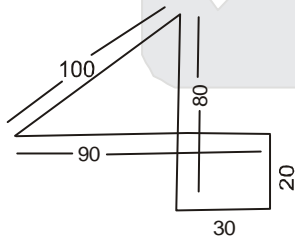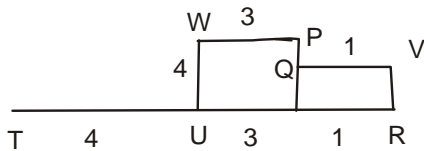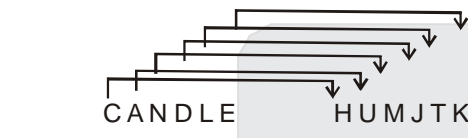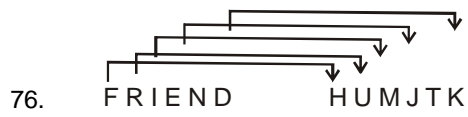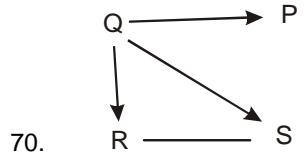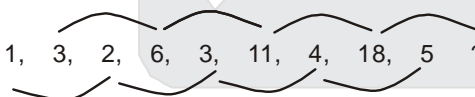
77. G O = 32

20+12=32

S O M E = 56

8+12+14+22 = 56

78. S E A R C H

2 1 4 6 7 3

79. doubt   Carpet------> 2

Red------> 4

Spread------> 7

One------> 3

80. 1,   3,   2,   6,   3,   11,   4,   18,   5   ?

Prime no. addition

81. 7,   9, 8,   6, 10, 9, 5, 11, 10, ?, 12

82. 28 Triangles, 6 squares

85. 3-5-1   -----> 3- 2- 4

87. 2-1-5   ------> 3-4-6

94. difference of two letters

95. 2 x 3+6 = 12, 6 x 7+10 =52

97. 93-63 = 30, 30-27 = 3

98.   +3, +3

99.   12/6-3 x 2+ 8 = 4

100.   175/25 + 5 x 20 - 3 x 10 = 77

SOL. MAT (ODISHA)
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