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Rajnish Bhatnagar

Railway NTPC Pre

Solution

QYZ-9II024495-E



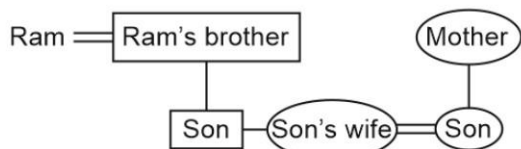
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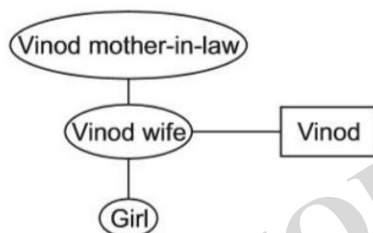


CBT I (Mathematics, Mental Ability, General Science & General Awareness)

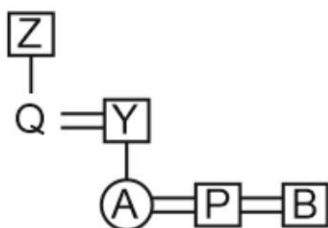
- 1.(C) Mitochondria
 2.(A) $\tan 60^\circ = \frac{DE}{EF}$
 $EF = \frac{15}{\sqrt{3}} = 5\sqrt{3} \text{ cm}$
 3.(B) mass of the body
 4.(A) carbon-12
 5.(A) traditional agriculture sector and modern industrial sector
 6.(D)



- 7.(C) Dayaram Sahni
 8.(A) Gujarat
 9.(D) Yukawa
 10.(B) Let the woman's age is $7x$
 and daughter's age = x
 According to the question,
 $7x + x = 2 \times 16$
 $\Rightarrow 8x = 32$
 $\therefore x = \frac{32}{8} = 4$
 $\therefore$ Woman's age = $7x = 7 \times 4 = 28$ years
 11.(B)



- 12.(A) $\frac{3}{8} = 37.5$; $\frac{2}{3} = 66.66$; $\frac{7}{12} = 58.33$
 13.(A) Sikkim
 14.(C) $9^{\text{odd}} = 9$
 So, unit digit is 9.
 15.(B) Non-justicable
 16.(A) Current electricity
 17.(A) the enlightened one
 18.(B) $SI = 2P = \frac{P \times R \times 20}{100}$
 $R = 10\%$
 $SI = P = \frac{P \times 10 \times T}{100}$
 $T = 10$ years
 19.(B)



- 20.(C) 7
 21.(A) Pakistan
 22.(A) $\frac{270 \times 2}{11}$ and $\frac{90 \times 2}{11}$
 23.(A) Hydrogen
 24.(C) Part IV A
 25.(D) Chandela
 26.(C) $SP = \frac{1850 \times 130}{100} = ₹ 2405$
 27.(A) Only I is implicit.
 28.(A)



- 29.(A) Sunday (second is one day ahead of the first).
 30.(C)



Similarly,

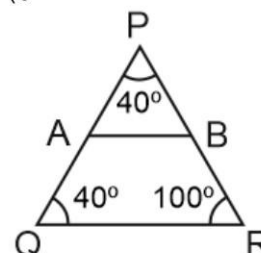


$\therefore ? = IPKN$

- 31.(B) $(10)^2 - 1 = 99$
 Similarly,
 $(9)^2 - 1 = 80$
 $\therefore ? = 80$
 32.(D)



- 33.(C) Hematite
 34.(B) Let B's salary is 100
 So, A's salary will be 125
 Required percentage = $\frac{25}{125} \times 100 = 20\%$
 35.(D) Canals $\rightarrow$ C, F, E
 River $\rightarrow$ B, G
 Valley $\rightarrow$ A, D
 36.(D) Sikandar Lodi
 37.(D) $\sqrt{(6400)} + \sqrt{(2601)} \times \sqrt{(2601)} = ?^3 - 63$
 $?^3 = 2681 + 63$
 $?^3 = 2744$
 $? = \sqrt[3]{2744} = 14$
 Hence, $? = 14$
 38.(A) $\angle PBA = \angle PAB$
 $100 - 40 = 60^\circ$
 (© 'Transversal line' concept is used here)



39.(B) Time taken = $\frac{80 + 90}{(10 + 7)} = \frac{170}{17} = 10$ seconds

40.(D) $49 - 2 = 47$, $90 - 6 = 84$
So, $53 - 7 = 46$

41.(B) krihed

Code		Their Meaning
kriphri	→	cool night
pgytwen	→	bright day
kri rub twen	→	day and night
phrihedtwen	→	winter cool day

The word 'night' is present in 1st and 3rd code, and so the meaning of code 'kri' is night. The word 'winter' is only in the 4th code and code 'hed' is not repeated in any other sentence. Hence 'hed' means winter.

42.(A) Arjumand Bano Beghum

43.(A) West Indies

44.(A) $12 \rightarrow 2^2 \times 3$

$15 \rightarrow 3 \times 5$

$90 \rightarrow 2 \times 3^2 \times 5$

$108 \rightarrow 2^2 \times 3^3$

$135 = 3^3 \times 5$

$150 \rightarrow 2 \times 3 \times 5^2$

Least Common Multiple = $2^2 \times 3^3 \times 5^2 = 2700$

45.(A) M. S. Swaminathan

46.(C) $(a - b)^2 + (b - c)^2 + (c - a)^2 = 2(a^2 + b^2 + c^2 - ab - bc - ca)$

$\frac{1^2 + 1^2 + (-2)^2}{2} = \frac{1 + 1 + 4}{2} = 3$

47.(A) Super computer

48.(C) $54 \times 5 + x + 52 \times 3 = 50 \times 9$

$270 + x + 156 = 450$

$x = 450 - 426$

$x = 24$

49.(D)

1 4 3 similarly, 5 2 7
+1 +1 +1 +1 +1 +1
2 5 4 6 3 8

50.(B) $A = 2000 \times \frac{11}{10} \times \frac{11}{10} \times \frac{11}{10}$

Amount = ₹ 2662

Compound Interest = $A - P = 2662 - 2000$

= ₹ 662

51.(A) xanthopylls

52.(A) The word is coded by moving only the alphabet at odd positions two steps forward.

C R O C K E R Y
+2 +2 +2 +2 +2 +2 +2
E R Q C M E T Y

Similarly,

A M B U L A N C E
+2 +2 +2 +2 +2 +2 +2
C M D U N A P C G

53.(C) Mitochondria

54.(B) $\frac{52000 - 44000}{100} \times 17 = ₹ 1360$

55.(D) $\frac{52000}{100} \times 22 \times \frac{65}{100} = 7436$

56.(A) $\frac{(18 + 15 + 22) - (22 + 8 + 20)}{100 \times 3} \times 52000 = 866.67$

57.(D) West to east

58.(A) 10% water = $\frac{40 \times 10}{100} = 4$ L

$\frac{36}{4 + x} = \frac{4}{1}$

$36 = 16 + 4x$

$4x = 36 - 16 = 20$

$x = 5$ L

59.(A) Fort St. George

60.(B) Heredity

61.(D)

D $\xrightarrow{+4}$ H $\xrightarrow{+4}$ L $\xrightarrow{+4}$ P
I $\xrightarrow{+4}$ M $\xrightarrow{+4}$ Q $\xrightarrow{+4}$ U
B $\xrightarrow{+4}$ F $\xrightarrow{+4}$ J $\xrightarrow{+4}$ N

$\therefore ? = \text{PUN}$

62.(B)

71 $\xrightarrow{-12}$ 59 $\xrightarrow{-11}$ 48 $\xrightarrow{-10}$ 38 $\xrightarrow{-9}$ 29
 $\xrightarrow{-8}$ 21

$\therefore ? = 21$

63.(C)

975 $\xrightarrow{-111}$ 864 $\xrightarrow{-111}$ 753 $\xrightarrow{-111}$ 642
 $\xrightarrow{-111}$ 531

$\therefore ? = 531$

64.(C) Shrey's rank from bottom = $7 + 10 = 17$

Total people = $(17 + 8) - 1 = 24$

65.(D) $x^2 - 3x + 1 = 0$

$x + \frac{1}{x} = 3$

$x^3 + \frac{1}{x^3} = 3^3 - 3 \times 3 = 18$

66.(C) Both I and II are implicit.

67.(A) $\frac{20 \times 4}{30} = \frac{16 \times 12}{x}$

$x = \frac{16 \times 12 \times 3}{8}$

$x = 72$ trees

68.(D) $x^2 = \frac{75}{4} + \frac{25}{4} = \frac{100}{4} = 25$

$x = 5$

69.(C) Oils (and all dairy products)

70.(D)

P $\xrightarrow{-2}$ N $\xrightarrow{-2}$ L $\xrightarrow{-2}$ J
V $\xrightarrow{-2}$ T $\xrightarrow{-2}$ R $\xrightarrow{-2}$ P
J $\xrightarrow{-2}$ H $\xrightarrow{-2}$ F $\xrightarrow{-2}$ D

But, T $\xrightarrow{-3}$ Q $\xrightarrow{-2}$ O $\xrightarrow{-2}$ M

Hence, TQOM are odd letters.

71.(C)

A $\xrightarrow{+2}$ C $\xrightarrow{+2}$ E

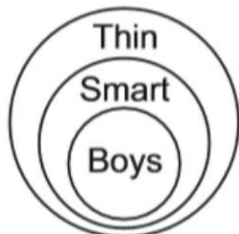
F $\xrightarrow{+2}$ H $\xrightarrow{+2}$ J

N $\xrightarrow{+2}$ P $\xrightarrow{+2}$ R

But, K $\xrightarrow{+1}$ L $\xrightarrow{+2}$ N

- Hence, KLN are odd letters.
- 72.(A) Passing marks = 40% = 40 + 40
40% = 80
So, maximum marks = 100% = 200
- 73.(C) $6^5 - 6^3 = 6^3(6^2 - 1)$
= 216×35
= 7560

74.(A)



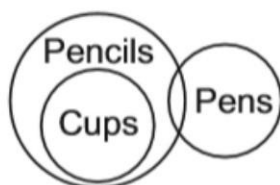
All boys are thin is definitely true. All smart are boys can be true. So, only conclusion I follows.

75.(D) $\frac{4+x}{12+x} = \frac{18+x}{36+x}$

On solving above equation, we will get
 $x = 7.2$

Thus, the number 7.2 should be added to each of the numbers to make them proportional.

76.(A)



Some pencils are cups is definitely true. No pencil are cups can never be true. Some cups are pens may be true. So, only conclusion I follows.

77.(C) Let the total work is 100 units.

A's one day work = $\frac{100}{25} = 4$ units

B's one day work = $\frac{100}{20} = 5$ units

(A + B) will do = $(4 + 5) = 9$ units/day
In 5 days $9 \times 5 = 45$ units completed.
Remaining $100 - 45 = 55$ units

B will do the left work in = $\frac{55}{5} = 11$ days

78.(B) Wooden plates = $11 + 17 + 19 = 47$

79.(D) Neither I nor II follows.

80.(D) $29 + 14 = 43$

81.(A) $10 \text{ CP} = 9 \text{ SP}$

$\text{CP} : \text{SP} = 9 : 10$

Profit percent = $\frac{\text{SP} - \text{CP}}{\text{CP}} \times 100$

= $\frac{(10 - 9)}{9} \times 100 = 11\frac{1}{9}\%$

82.(C) Number of students = $(6 + 28) - 1 = 33$

83.(B) Diagonal = $a\sqrt{2}$ (where a is side)

$18 = a\sqrt{2}$

$a = 9\sqrt{2} \text{ cm}$

Area = $a^2 = 9\sqrt{2} \times 9\sqrt{2} = 162 \text{ cm}^2$

84.(C) 15 January

85.(C) $\frac{3x-9}{5x-9} = \frac{12}{23}$

$69x - 207 = 60x - 108$

$9x = 99$

$x = 11$

Greater number = $5 \times 11 = 55$

86.(A) Maria Sharapova

87.(D) Downstream speed (D) = $6 + 1.5 = 7.5 \text{ km/hr}$

Upstream speed (U) = $6 - 1.5 = 4.5 \text{ km/hr}$

Time taken = $\frac{22.5}{7.5} + \frac{22.5}{4.5}$

= $3 + 5$

= 8 hours

Gujarat

88.(D)

89.(B)

90.(C) Internal hard disk

91.(B) Microprocessor

92.(D) $\theta + \phi = 120^\circ$

$\cos \theta = \frac{\sqrt{3}}{2}$

$\Rightarrow \theta = 30^\circ$

$\sin 90^\circ = 1$

93.(A) D. G. Tendulkar

94.(D) Neither I nor II follows.

95.(D) Formatting

96.(A) Dutee Chand

97.(A) Russia & China

98.(B) Narendra Singh Tomar

99.(A)

100.(C) India