

**25-06-2014 GROUP-2A MODEL TEST KEYS**

**GENERAL TAMIL**

|    |    |    |    |    |    |    |    |    |     |
|----|----|----|----|----|----|----|----|----|-----|
| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10  |
| D  | C  | A  | A  | A  | B  | D  | C  | D  | A   |
| 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20  |
| C  | B  | A  | B  | C  | B  | D  | C  | A  | C   |
| 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30  |
| A  | D  | B  | C  | B  | A  | C  | A  | B  | D   |
| 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40  |
| D  | C  | B  | B  | D  | B  | C  | C  | B  | C   |
| 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50  |
| B  | D  | C  | B  | C  | C  | B  | A  | B  | D   |
| 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60  |
| B  | B  | D  | A  | C  | B  | C  | A  | D  | C   |
| 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70  |
| B  | D  | A  | B  | C  | D  | C  | A  | B  | B   |
| 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80  |
| D  | A  | D  | C  | D  | D  | A  | A  | B  | C   |
| 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90  |
| B  | C  | D  | D  | A  | C  | B  | A  | D  | D   |
| 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |
| A  | B  | D  | B  | A  | D  | A  | A  | D  | B   |

**GENERAL ENGLISH**

|    |    |    |    |    |    |    |    |    |     |
|----|----|----|----|----|----|----|----|----|-----|
| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10  |
| D  | D  | A  | C  | D  | B  | C  | D  | C  | D   |
| 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20  |
| C  | A  | B  | D  | B  | C  | D  | D  | C  | B   |
| 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30  |
| B  | A  | D  | A  | D  | B  | C  | C  | C  | C   |
| 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40  |
| C  | C  | A  | C  | D  | D  | D  | A  | D  | D   |
| 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50  |
| D  | C  | A  | B  | C  | D  | B  | D  | B  | A   |
| 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60  |
| B  | B  | C  | B  | D  | C  | C  | B  | D  | A   |
| 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70  |
| A  | A  | B  | B  | D  | B  | C  | B  | B  | C   |
| 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80  |
| D  | A  | C  | D  | A  | A  | B  | B  | D  | C   |
| 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90  |
| B  | D  | C  | C  | A  | C  | B  | A  | B  | B   |
| 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |
| A  | B  | D  | C  | C  | D  | C  | A  | B  | D   |

**GENERAL KNOWLEDGE**

|     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 101 | 102 | 103 | 104 | 105 | 106 | 107 | 108 | 109 | 110 |
| A   | D   | A   | B   | A   | A   | B   | D   | C   | A   |
| 111 | 112 | 113 | 114 | 115 | 116 | 117 | 118 | 119 | 120 |
| D   | C   | B   | B   | B   | B   | A   | A   | A   | D   |
| 121 | 122 | 123 | 124 | 125 | 126 | 127 | 128 | 129 | 130 |
| A   | A   | C   | A   | D   | D   | D   | B   | C   | C   |
| 131 | 132 | 133 | 134 | 135 | 136 | 137 | 138 | 139 | 140 |
| D   | A   | C   | D   | D   | D   | A   | D   | A   | B   |
| 141 | 142 | 143 | 144 | 145 | 146 | 147 | 148 | 149 | 150 |
| D   | B   | A   | D   | B   | D   | D   | A   | A   | C   |
| 151 | 152 | 153 | 154 | 155 | 156 | 157 | 158 | 159 | 160 |
| C   | B   | B   | B   | A   | D   | C   | B   | C   | D   |
| 161 | 162 | 163 | 164 | 165 | 166 | 167 | 168 | 169 | 170 |
| B   | C   | C   | B   | D   | B   | D   | D   | A   | A   |
| 171 | 172 | 173 | 174 | 175 | 176 | 177 | 178 | 179 | 180 |
| A   | B   | A   | A   | B   | C   | A   | D   | B   | B   |
| 181 | 182 | 183 | 184 | 185 | 186 | 187 | 188 | 189 | 190 |
| A   | C   | A   | A   | C   | C   | B   | C   | C   | C   |
| 191 | 192 | 193 | 194 | 195 | 196 | 197 | 198 | 199 | 200 |
| D   | D   | B   | D   | B   | C   | B   | A   | D   | C   |

**All Explanation by Mr.Rajaboopathy, Founder RADIAN IAS ACADEMY in his own handwriting.**

**SOME OF OUT STUDENT'S ACHIEVEMENTS**

Our Student **MR. RAJENDRA CHOLAN BE** Scored highest Ever Record Mark in 65 (443)

கடந்த வருட **VAO** மாநில முதல் ரேங்க்

Mrs. Mariselvi now Municipal Commissioner)

மற்றும் **GROUP-2** மாநில முதல் ரேங்க் (Mr.

PARTHASARATHY, MUNICIPAL COMMISSIONER.)

2014 - **FIRST ATTEMPT DEPUTY COLLECTORS** Miss. Divyashri & Mr.Rajkumar.

In 2013 GROUP-1, 14 Students got DC's.

State 3<sup>rd</sup> Rank Mr. S.H. Sheik Mohideen ME

State 6<sup>th</sup> Rank Mr. Sathish Kumar BE

**GROUP-1 2009-13 : 83 RADIANs got postings.**

State 1st Rank Mr. PARTHEEBAN J (Our MAINS Student) Reg.No-02204009

Deputy Collector Miss. JANANI R (our PRELIMS & MAINS Student) 50024012

Deputy Collector Mr. MANUEL RAJ (Our GROUP-1 & 2 Student) 03101083

State 2nd Rank Mr. ARUN SATHYA B (Our TEST Student) - Reg.No-50086008

State 4th Rank Mrs. ABIRAMI (Our Prelims & Mains-ONLINE Student)50073052

State 5th Rank Mr.PALANIKUMAR (Our TEST Student) Reg.No-50060189.

**GROUP-2 2011-12.**

GROUP-2 2009 to 2012 : **342 RADIAN** Students got postings.

State 1st Rank (Sub Registrar) Mr. SHEIK MOHIDEEN BE Reg.No-01059208

State 2<sup>nd</sup> Rank (MC) Mr. PARTHASARATHY, MUNICIPAL COMMISSIONER.

He also Got State 3<sup>rd</sup> Rank in GROUP-1 Exam result announced in Feb.2013.

State Women's 1st Rank (Municipal Comm) Mrs. MAHESWARI No-03210034

**VAO 2012 STUDENT'S ACHIEVEMENT.**

State 1st Rank (VAO) Mrs. MARISELVI BE. Reg.No-90122294.

She also secured 37<sup>th</sup> Rank in 2012 GROUP-4 Exam.

**COACHING DETAILS**

To get coaching details/sms alerts for the given exams from your mobile,

1) sms IAS your place 2) sms TNPSC your place

3) sms BANK your place 4) sms TRB your place

5) sms SI your place 6) sms SSC your place

7) sms IIT your place

Ex. **TNPSC MADURAI** to **98403-98093.**

**138** Annual rate of Inflation = 20%  
 ஆண்டு வாரிய விகிதம் = 20%  
 Inflation rate should be applied on Compound basis  
 வாரிய விகிதம் கூட்டு வட்டி அடிப்படையில் பயன்படுத்தப்படும்.  
 $2013 = 50$   
 $2014 = 50 + \frac{20}{100} \times 50 = 60.$   
 $\therefore 2015 = 60 + 12 = 72.$   
 [SHORTCUT: No need to use pencil]  
 $50 + 10 + 12 = 72$

**139** P → 25 → 6  
 Q → 30 → 5 [Short Cut]  
 $\frac{50}{150} \times 11$   
 5 days:  $\frac{55}{95} \Rightarrow \frac{95}{5} = 19$   
 (ALITER) லாண்ட்ஸ் டிரை  
 $5 \left( \frac{1}{25} + \frac{1}{30} \right) + x \left( \frac{1}{30} \right) = 1$   
 5 இலாண்ட்ஸ் டிரை '5' நாட்கள் லாண்ட்ஸ் டிரை.  
 $5 \times \frac{11}{30} + \frac{x}{30} = 1$   
 $\Rightarrow 11 + x = 30 \Rightarrow x = 19$

**113** கிராமத்தின் மொத்தம் (100) → 4-மாதத்தில் (50) ஆகும்  
 50 இலாண்ட்ஸ் டிரை → 25 ஆகும்.  
 4-மாதத்தில்  
 மொத்தம் 100 → 25 ஆக இலாண்ட்ஸ் டிரை  
 உடல் சிதைவு 8 லாண்ட்ஸ் டிரை  
 $x$  becomes  $\frac{x}{4}$  in 4 months →  $\frac{x}{2}$  in 2 months →  $\frac{x}{2} = \frac{x}{4}$

115) Use the following formula:

$$\left\{ \begin{aligned} \text{pH} &= -\log_{10} [\text{H}^+] \\ \text{pOH} &= -\log_{10} [\text{OH}^-] \\ \text{pH} + \text{pOH} &= 14. \end{aligned} \right.$$

$$\text{pH} = -\log_{10} (0.001)$$

$$= -\log_{10} 10^{-3}$$

$$= -(-3) \log_{10} 10 \quad [\because \log_{10} 10 = 1]$$

$$\boxed{\text{pH} = 3}$$

$$\text{pOH} = -\log_{10} [\text{OH}^-]$$

$$= -\log_{10} [0.1]$$

$$= -\log_{10} 10^{-1}$$

$$\text{pOH} = +1$$

$$\therefore \text{pH} = 14 - \text{pOH} = 14 - 1 = 13.$$

$$\boxed{\text{pH} = 13}$$

pH: 3 and 13 ✓

140) The solid matters in Fresh Grapes and Raisin should be same.

SHORTCUT

$$\frac{5}{100} \times 90 = \frac{4}{100} \times x$$

$$\Rightarrow \boxed{x = 25} \checkmark$$

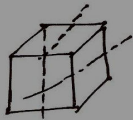
141) SHORTCUT

$$15 + 15 + \frac{15 \times 15}{100} = \boxed{32.5\%} \checkmark$$

$$\boxed{x + y + \frac{xy}{100} \%}$$

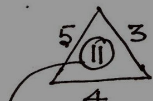
Also applicable for Square, Rectangle, Circle etc.

142)

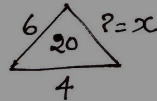


(Proof) (Proof) சமன்பாடுகள் & சமன்பாடுகள் கிடைக்கும்.

143)



$$5 \times 3 - 4 = 11$$



$$6 \times x - 4 = 20$$

$$\boxed{x = 4}$$

144)

'B' → உணர்வு மையப்படுத்திய சமன்பாடு சமன்பாடு.

We do not know the gender of 'B'.

∴ (D) cannot be determined.

145) SHORTCUT

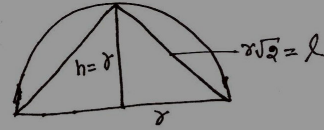
யூ (6) சதவீதம் உயர்த்தப்பட்டால், 12 கூட வேண்டும். எனவே மொத்தம்  $66 + 12 = \boxed{78}$  ✓

Detailed Method

$$\frac{12 \times 78 - 66 + x}{12} = 79$$

On Solving  $x = \boxed{78}$

146)



$$\therefore \text{அகலம்} = \pi r l = \frac{22}{7} \times r \times r \sqrt{2} = \boxed{154\sqrt{2}} \checkmark$$

147) SHORTCUT

$$\frac{D}{M} = \frac{x+12}{4x+12} = \frac{5}{11}$$

$$\Rightarrow 11x + 132 = 20x + 60$$

$$9x = 72 \Rightarrow x = \boxed{8}$$

$$\text{அகலம்} = 3x = \text{Difference} = \boxed{24}$$

148)

$$x + \frac{40}{100}x = 84$$

$$\frac{140}{100}x = 84 \Rightarrow x = \boxed{60}$$

$$\therefore \frac{30}{100} \times 60 = \boxed{18} \checkmark$$

149) SHORTCUT

$$156 + 3 \times 3 = \boxed{252} \checkmark$$

3 years SI = 156.

$$3 \text{ year SI @ } 4\% = 96 \Rightarrow 3 \times 3 = \frac{156}{252}$$

150)

$$5120 = P \left(1 + \frac{R}{100}\right)^3 \rightarrow (1)$$

$$7290 = P \left(1 + \frac{R}{100}\right)^6 \rightarrow (2)$$

$$(2) \div (1) \Rightarrow \frac{7290}{5120} = \frac{P \left(1 + \frac{R}{100}\right)^6}{P \left(1 + \frac{R}{100}\right)^3}$$

$$\Rightarrow \left(1 + \frac{R}{100}\right)^3 = \frac{7290}{5120} = \frac{729}{512} = \frac{9^3}{8^3}$$

$$\Rightarrow \left(1 + \frac{R}{100}\right) = \frac{9}{8} \Rightarrow \frac{R}{100} = \frac{9}{8} - 1$$

$$\Rightarrow R = \frac{100}{8} = \boxed{12.5} \checkmark$$

SHORTCUT

$$\boxed{1 + \frac{R}{100} = \frac{9}{8} \Rightarrow R = 12.5} \checkmark$$

151)

$$P = \frac{{}^{13}C_2 + {}^{13}C_2}{52C_2} \text{ OR means "+" AND means "x"}$$

$$P = \frac{\frac{13 \times 12}{2} + \frac{13 \times 12}{2}}{\frac{52 \times 51}{2}} = \frac{13 \times 12}{52 \times 26} = \frac{156}{52 \times 26} \checkmark$$

152) கொம்புமுனையி் தகர, உரிய அகற்சி எதனுடல் ஸ்பெஷல்ஸ் ஈ.டி லாஸ்தை.

Except the top surface, the remaining 5 Rectangular Surfaces are wet.

Total area of the wet surface  $= 2(lb+bh+lh) - lb$

$l = 6, b = 4, h = \frac{5}{4}$   
 $= 2b+2bh+2lh$   
 $= 6 \times 4 + 2 \times 4 \times \frac{5}{4} + 2 \times 6 \times \frac{5}{4}$   
 $= 24 + 10 + 15 = 49$

153)  $lb = 144$   
 $(l+5)b = 144 + 40$

$lb + 5b = 184$   
 $5b = 40 \Rightarrow b = 8 \Rightarrow l = \frac{144}{8} = 18$

154) A can do whole work in  $1 \times \frac{4}{4} = 4$  days.  
 'A' 4 நாட்களில் முழுப்பலி.  
 B' can do the whole work in  $1 \times \frac{6}{6} = 6$  days

$\frac{1}{4} + \frac{1}{6} = \frac{3+2}{12} = \frac{5}{12}$   
 $\Rightarrow \frac{12}{5} \Rightarrow 2 \frac{2}{5}$  Days.

SHORTCUT

$\frac{4 \rightarrow 3}{6 \rightarrow 2}$   
 $\frac{12}{2} \div 5 \Rightarrow 2 \frac{2}{5}$  Days.

183) 2, 3, 5, 7, 11, 13, 17, 19, 23, 29  
 Prime Numbers (பலி எண்கள்)  
 Next prime numbers is '13'.  
 Ans  $29 + 13 = 42$

NOTE: '1' neither prime nor Composite.  
 '1' எப்பி் பலி எண்களில் அல்ல, பலி எண்களில் அல்ல.  
 Smallest prime number is '2'.

194) 

|    |    |    |
|----|----|----|
| 12 | 10 | 4  |
| 35 | 24 | 48 |
| 37 | 26 | ?  |

  
 $4^2 + 48^2 = 52^2$   
 $37^2 = 12^2 + 35^2$   
 $10^2 + 24^2 = 26^2$

195) Downstream Speed  $= \frac{18}{4} = 4.5$  km/h  
 நீரோடியில் தரையல் வேல்  $= \frac{18}{4} = 4.5$  k/h  
 Upstream Speed  $= \frac{18}{12} = 1.5$  k/h  
 (நீர் எதிரில் தரையல்) எதிர்தரையல் வேல்  
 லாஸ்தை வேல்  $= \frac{4.5 + 1.5}{2} = 3$  k/h  
 நீரோடி வேல்  $= \frac{4.5 - 1.5}{2} = 1.5$  k/h

196) SHORTCUT

$r = 10, r_1 = 5$   
 $A = 100, A_1 = 25$   
 75% decrease.

197) Let the number of chocolates be 'x'.

$\frac{x}{40} - \frac{x}{60} = 2 \Rightarrow \frac{3x-2x}{120} = 2 \Rightarrow x = 240$

198) In this die, the adjacent faces of number 2 are {1, 3, 5 & 6}  
 $\therefore$  opposite to '2' is '4'.

199) The difference between divisors and remainders are same in every thing.

(2)  $48-38 = 60-50 = 72-62 = 108-98 = 120-110 = 10$  (K say)

$\therefore$  Ans LCM(48, 60, 72, 108, 120) - 10

$\begin{array}{l} 12 \mid 48, 60, 72, 108, 120 \\ 2 \mid 4, 5, 6, 9, 10 \\ 3 \mid 2, 5, 3, 9, 5 \\ 5 \mid 2, 5, 1, 3, 5 \\ \hline 2, 1, 1, 3, 1 \end{array}$

LCM =  $12 \times 2 \times 3 \times 5 \times 2 \times 3 = 2160$

$\therefore$  Ans is  $2160 - 10 = 2150$

200) Here  $a = 7.3, b = 6.8$ .

$\frac{a^3 - b^3}{a^2 + b^2 + ab} = a - b \Rightarrow 7.3 - 6.8 = 0.5$

NOTE:  $a^3 - b^3 = (a-b)(a^2 + ab + b^2)$   
 $a^3 + b^3 = (a+b)(a^2 - ab + b^2)$

116) Oxidation number (ஆக்ஸிஜனேஜ் எண்)

H  $\rightarrow +1$   
 O  $\rightarrow -2$

Metal Hydrides, உலகம் எதிர்தரையல்  $\rightarrow H = -1$   
 Peroxide O  $\rightarrow +2$

$MnO_2$   
 $x + 2 \times (-2) = 0 \Rightarrow x = 4$ , for  $Mn = 4$

$H_2S_2O_7$   
 $2 \times (+1) + 2 \times (-2) + 7 = 0 \Rightarrow 2x = 12 \Rightarrow x = 6, S = 6$

$NaAlH_4$   
 $+1 + x + 4 \times (-1) = 0 \Rightarrow x = 3 \Rightarrow Al = 3$

$HNO_3$   
 $1 + x - 3 \times 2 = 0 \Rightarrow x = 5 \therefore$  for  $N = 5$