## Binomial Probability (understand components of formula)

| 1 <sup>st</sup><br>Question     | 2 <sup>nd</sup><br>Question | 3 <sup>rd</sup><br>Question   | Possible<br>Outcomes  | Probability<br>S   | Number of<br>correct<br>answers            |  |
|---------------------------------|-----------------------------|---|---|--|--|--|
|                                 |                             |   | Ш   | $\frac{3}{4} \cdot \frac{3}{4} \cdot \frac{3}{4}$            | 0  |  |
|                                 |                             | C   | IIC   | $\frac{3}{4} \cdot \frac{3}{4} \cdot \frac{1}{4}$            | 1  |  |
|                                 | C                           |   | ICI   | $\frac{3}{4} \cdot \frac{1}{4} \cdot \frac{3}{4}$            | 1  |  |
|                                 |                             | C   | ICC   | $\frac{3}{4} \cdot \frac{1}{4} \cdot \frac{1}{4}$            | 2  |  |
| С <                             |                             |   | CII   | $\frac{1}{4} \cdot \frac{3}{4} \cdot \frac{3}{4}$            | 1  |  |
|                                 |                             | C   | CIC   | $\frac{1}{4} \cdot \frac{3}{4} \cdot \frac{1}{4}$            | 2  |  |
|                                 |                             |   | CCI   | $\frac{1}{4} \cdot \frac{1}{4} \cdot \frac{3}{4}$            | 2  |  |
|                                 | C                           | C   | CCC   | $\frac{1}{4} \cdot \frac{1}{4} \cdot \frac{1}{4}$            | 3  |  |
| Number of<br>correct<br>answers | Possible<br>Outcomes        | Proba   | Probability   |  | Probability<br>with<br>binomial<br>formula |  |
| 0                               | Ш                           | $\frac{3}{4}\cdot\frac{3}{4}\cdot\frac{3}{4}$                             | $\frac{3}{4} \cdot \frac{3}{4} \cdot \frac{3}{4}$   |  | $\left(\frac{3}{4}\right)^3$               |  |
| 1                               | IIC, ICI, CII               | $\frac{3}{4}\cdot\frac{3}{4}\cdot\frac{1}{4}+$                            | $\frac{3}{4} \cdot \frac{3}{4} \cdot \frac{1}{4} + \frac{3}{4} \cdot \frac{1}{4} \cdot \frac{3}{4} + \frac{1}{4} \cdot \frac{3}{4} \cdot \frac{3}{4}$ |  | $\left(\frac{3}{4}\right)^2$               |  |
| 2                               | CCI, CIC, I                 | $CC \qquad \frac{1}{4} \cdot \frac{1}{4} \cdot \frac{3}{4} + \frac{3}{4}$ | $\frac{1}{4} \cdot \frac{1}{4} \cdot \frac{3}{4} + \frac{1}{4} \cdot \frac{3}{4} \cdot \frac{1}{4} + \frac{3}{4} \cdot \frac{1}{4} \cdot \frac{1}{4}$ |  | $\left(\frac{3}{4}\right)^{1}$             |  |
| 3                               | CCC                         | $\frac{1}{4} \cdot \frac{1}{4} \cdot \frac{1}{4}$                         |   | $(1)\cdot\left(\frac{1}{4}\right)^3\left(\frac{1}{4}\right)$ | $\left(\frac{3}{4}\right)^0$               |  |