

FINAL ANSWERS FOR PAST YEAR SETS

Note: You need to work out for the workflow!!

Session 2017/2018

Question 1

- (a) (i) 8 ways (ii) 3 ways (iii) 5 ways (iv) 5 ways
(b) (i) 118 ways (ii) 240 ways (iii) 19 ways

Question 2

- (a) 376 ways
(b) (i) 8 ways (ii) 5040 ways (iii) 80640 ways
(c) 3600 ways

Question 3

- (a) (i) 6 way (ii) 252 ways (iii) 56220 ways
(b) 465,585,120 ways
(c) (i) 453600 ways (ii) 990 ways

Question 4

- (c) 16 marbles (b) 102 students (c) 26 students
(d) Explain why the number of pigeons = 6 and pigeonholes = 5.

Session 2016/2017

Question 1

- (a) 12,355,928 ways
(b) (i) 15 ways (ii) 225 ways (iii) 120 ways

Question 2

- (a) (i) 720 (ii) 20160 (iii) 5040 (iv) 25920
(b) (i) 10 (ii) 6 (iii) 4
(c) If the students regard that all the questions are related:
 (i) 126 (ii) 24 (iii) 6 (iv) 18144
 If the students regard that all the questions are not related:
 (i) 126 (ii) 3024 (iii) 756 (iv) 18144

Question 3

- (a) (i) $\frac{3}{11}$ (ii) $\frac{5}{11}$ (iii) $\frac{7}{11}$
(b) (i) $\frac{3}{15} = 0.2$ (ii) 0.65

Question 4

- (a) $\frac{0.1}{0.3} = \frac{1}{3}$ (b) Question is cancelled

Question 5

- (a) 0.49
(b) (i) 0.095 (ii) 0.853 (iii) 48167

Session 2015/2016

Question 1

- (i) 9 ways
(ii) (a) 1287 ways (b) 90 ways (c) 90 ways (d) 135 ways

Question 2

- (i) (a) 480 (b) 100 (c) 36
(ii) (a) 24 (b) 12 (c) 12 (d) 60

Question 3

- (i) 0.9
(ii) (a) 0.009 (b) 0.999 (c) $0.00991 \approx 0.01$

Question 4

- (i) 0.27
(ii) (a) 0.3214 (b) 0.75 (c) 0.91

Question 5

- (i) 0.70 (ii) 0.40 (iii) 0.8571

Session 2014/2015

Question 1

- (a) 7 (b) 1440 (c) 3600 (d) 576 (e) 1440

Question 2

- (a) 495 (b) 16065 (c) 256

Question 3

- (a) 0.32 (b) 0.68 (c) Office

Question 4

- (a) 0.44 (b) 0.402 (c) 0.359 (d) 0.848

Question 5

- (a) 0.45 (b) 0.1125 (c) 0.467 (d) 0.213

Session 2013/2014

Question 1

- (i) 302702400 (ii) 1.928×10^{13} (iii) 3991680 (iv) 533520

Question 2

- (i) (a) 6188 (b) 52
(ii) (a) 194040 (b) 332904

Question 3

- (i) pq $(1-p)q$ $(1-p)(1-q)$
(ii) $pq + p - q + q - pq + 1 - q - p + pq = 1$
(iii) 0.85
(iv) 0.985
(v) 0.085

Question 4

- (i) 0.55
(ii) 0.375
(iii) 0.63
(iv) 0.48