Quiz Date: 19th July 2020

Directions (1-5): Study the given information carefully to answer the questions.
In an Exam of 600 students of a college in which 25% student passed in only English, 28% student passed in only Math and 22% student passed in only science. 2% students passed in all of the three subjects. Number of passed students in both math and Science together is $33\frac{1}{3}\%$ more than the number of passed students in only math and science together. Number of passed student in only English and math together is $28\frac{4}{7}\%$ less than that of only English and science together. The ratio of passed student in English, math and science is 39:41:37.

Q1. How many students failed in English and math together?
(a) 156
(b) 162
(c) 168
(d) 184
(e) 196

Q2. Number of passed students in only math and science together is what percentage of passed students in English.
(a) 12.23%
(b) 13.53%
(c) 11.50%
(d) 15.38%
(e) 14.87%

Q3. Find out the ratio of passed students in math to failed students in English?
(a) 41:61
(b) 43:62
(c) 44:65
(d) 38:59
(e) 41:63

Q4. Find out the average number of students who passed in only 2 subjects?
(a) 24
(b) 30
(c) 36
(d) 42
(e) 48

Q5. Find out the ratio of failed students in both math and science together to failed student in all of the subject?
(a) 5:1
(b) 5:3
(c) 6:5
(d) 6:1

(e) 5:4

Directions (6-10): Read the data carefully and answer the question.
There are some candidates who have filled application form for admission. Out of total filled application, there are four categories i.e. ST, SC, OBC and UR. Out of total application, 20% application are filled by ST candidates in which ratio of application filled by boys to girl is 5 : 1. 25% of remaining filled application filled by SC candidates and total application filled by girls in SC category is 63 more than total application filled by girls in ST category. $\frac{7}{18}^{th}$ of remaining application are filled by OBC category candidates, while ratio of boys to girls is 9 : 5 in total applications filled by OBC candidates. The ratio of girls to boys in total applications filled by UR candidates is 1 : 2 and total number of application filled by girls in all the categories is 406.

Q6. Find ratio of total applications filled by SC girls to total applications filled by OBC boys?
(a) 4 : 9
(b) 2 : 9
(c) 1 : 9
(d) 5 : 9
(e) 7 : 9

Q7. Find average number of applications filled by boys of SC, ST & OBC categories?
(a) 182
(b) 186
(c) 188
(d) 192
(e) 196

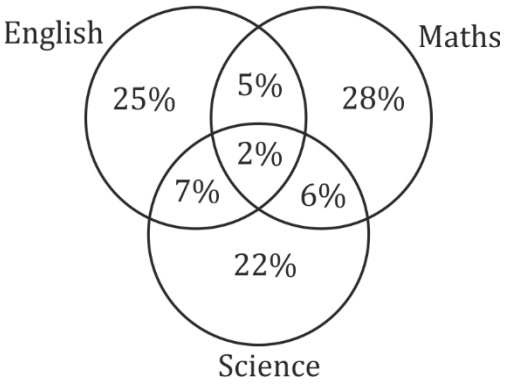
Q8. Total applications filled by OBC boys candidates is what percent less than total application filled by SC & OBC girls candidates?
(a) 15%
(b) 5%
(c) 12%
(d) 7%
(e) 10%

Q9. Total applications filled by UR boys are how much more than total applications filled by SC boys?
(a) 151
(b) 161
(c) 165
(d) 167
(e) 177

Q10. Find total applications filled by boys candidates?
(a) 854
(b) 848
(c) 844
(d) 828
(e) 832

Solutions

S(1-5)
Passed students in Only English=25%
Passed students in Only math=28%
Passed students in Only science=22%
Passed students in all subjects =2%
Let number of passed students in only math and science=$3x$
And number of passed students in both math and science = $4x$
So, passed students in all subjects =$4x - 3x = 2\%$
$x = 2\%$
So, number of passed students in only math and science=6%
And number of passed students in both math and science = 8%
Let number of passed students in only English and Science=$7x$
And number of passed students in only math and science = $5x$
ATQ,
Ratio of passed students in English, math and science =
$$27\% + 12x : 36\% + 5x : 30\% + 7x = 39 : 41 : 37$$
On solving
We get,
$x = 1$
number of passed students in only English and Science=7%
And number of passed students in only math and English = 5%



Total passed students in English exam = 39%
Total passed students in Math exam = 41%
Total passed students in Science exam = 37%

S1. Ans. (b)
Sol.
Failed student in all subject=100-(25+28+22+5+6+7+2)
=5%
Failed student in English and math together=number of passed student in only science + number of students who failed in all subject
=22%+5%=27%
$=600 \times \frac{27}{100}$
=162

S2. Ans. (d)
Sol.
Required percentage= $\frac{6}{39} \times 100 = 15.38\%$

S3. Ans. (a)
Sol.
Required ratio =41:(100-25-5-2-7)
=41:61

S4. Ans. (c)

Sol.

Average Students who passed in only two subjects= $\frac{(5+6+7)}{3}$=6%

Required number = $600 \times \frac{6}{100} = 36$

S5. Ans. (d)

Sol.

Required ratio = 25% + 5%: 5%

=6:1

S (6-10):

Let total filled applications = 100x

Total applications filled by ST candidate = $100x \times \frac{20}{100} = 20x$

Total applications filled by SC candidates = $(100x - 20x) \times \frac{25}{100} = 20x$

Total application filled by OBC candidates = $(100x - 20x - 20x) \times \frac{7}{18} = \frac{70x}{3}$

Total applications filled by UR candidates = $\left(100x - 20x - 20x - \frac{70x}{3}\right) = \frac{110x}{3}$

Total applications filled by girls in ST category = $20x \times \frac{1}{6} = \frac{10x}{3}$

Total application filled by girls in SC category = $\left(\frac{10x}{3} + 63\right)$

ATQ—

$\frac{10x}{3} + \left(\frac{10x}{3} + 63\right) + \frac{70x}{3} \times \frac{5}{14} + \frac{110x}{9} = 406$

$\left[\frac{10x}{3} + \frac{10x}{3} + 63 + \frac{25x}{3} + \frac{110x}{9}\right] = 406$

$\frac{30x+30x+567+75x+110x}{9} = 406$

$245x = 3087$

$x = 12.6$

Total filled application = 1260

Category	Girls	Boys
ST	$\frac{10\times12.6}{3} = 42$	$20 \times 12.6 - \frac{10\times12.6}{3} = 210$
SC	$\frac{10\times12.6}{3} + 63 = 105$	$20 \times 12.6 - \left(\frac{10\times12.6}{3} + 63\right) = 147$
OBC	$\frac{70\times12.6}{3} \times \frac{5}{14} = 105$	$\frac{70\times12.6}{3} \times \frac{9}{14} = 189$
UR	$\frac{110\times12.6}{9} = 154$	$\frac{110\times12.6}{3} \times \frac{2}{3} = 308$

S6. Ans(d)

Sol.

Required ratio = $\frac{105}{189}$

= 5 : 9

S7. Ans(a)

Sol.

Required average $= \frac{210+147+189}{3}$

$= \frac{546}{3}$

$= 182$

S8. Ans(e)

Sol.

Total application filled by SC & OBC girls = 105 + 105 = 210

Required percentage $= \frac{210-189}{210} \times 100$

$= \frac{21}{210} \times 100$

$= 10\%$

S9. Ans(b)

Sol.

Required difference $= 308 - 147$

$= 161$

S10. Ans(a)

Sol.

Total applications filled by boys = 210 + 147 +189 + 308

= 854