Solution for Q 18 to Q 20 :

Q18 .

Since Aditya didn't get a call from any of the colleges, so for each college, he either didn't clear one of the sectional cut-offs or he didn't clear the aggregate cut-off or both. If he didn't clear one of the sectional cut-offs, then for that section he scored less marks than the least cut-off among the given cut-offs of all the colleges.

For example, for section A, it is given that the cut-offs for colleges 1, 4 and 5 are 42, 43 and 45 respectively. The least cut-off among them is 42.

So, in order to not clear the sectional cut-off of section A for colleges 1, 4 and 5, he should have scored less than 42. Similarly,

For colleges 1, 2 and 6, Aditya's Section B marks < 41
For colleges 1, 2, 3 and 5, Aditya's Section C marks < 42
For colleges 4 and 6, Aditya's Section D marks < 44

If he scores less in Section C and D, he would not get calls for any colleges. Also in order to maximise the score we would assume that he got just one less than the cut-off in section C and D and he scored maximum marks (50) in other sections. Maximum marks obtained by Aditya such that he doesn't get any calls = 41 + 43 + 50 + 50 = 184
Hence, option 3.

Q19 .

Since Bhama got calls from all colleges, she must have cleared each of the 4 sections. This means that for a particular section she scored more marks than the greatest cut-off for that section across the six colleges. For example, for section A, it is given that the cut-offs for colleges 1, 4 and 5 are 42, 43 and 45 respectively. The greatest cut-off among them is 45. So, in order to clear the sectional cut-off of section A for all the colleges, she should have scored at least 45. Since we wish to minimise her marks, we should take her score in section A as 45. Similarly, in sections B, C and D, she scored 45, 46, and 45 marks respectively.

Bhama's minimum marks such that she gets calls from all the colleges = 45 + 45 + 46 + 45 = 181
Hence, option 2.

Note: This is already greater than the highest aggregate cut-off of all colleges (which is 180 for college 5). So, she will get calls from all 6 colleges.

Q20 .

The aggregate cut-off for each college is given in the common data. In order for Charlie to get minimum marks in one of the sections, he should have got maximum marks (i.e. 50) in the other three sections.

For example, the aggregate cut-off in college 1 is 176. Since, we want minimum marks in a section he should have gotten an aggregate of exactly 176. To minimise one of the sections, assume that he got 50 marks in the 3 sections whose cut-off is given in the common data. Then, Charlie will get a call from college 1 if he gets at least 176 – (50 × 3) = 26 marks in section D, provided that the cut-off for this section is also 26.

Now, there is at least one unknown sectional cut-off for each of the colleges, so we can use the same logic as used above for each of the remaining colleges. For college 2, the minimum marks that Charlie needs to get a call = 175 – 150 = 25
For college 3, the minimum marks that Charlie needs to get a call = 171 – 150 = 21
For college 4, the minimum marks that Charlie needs to get a call = 178 – 150 = 28
For college 5, the minimum marks that Charlie needs to get a call = 180 – 150 = 30
For college 6, the minimum marks that Charlie needs to get a call = 176 – 150 = 26
The question states that Charlie only gets a call from 2 of the colleges. So, Charlie got 25 marks.
Hence, option 3.

Q1 to 5:
Since40%ofthestudentswerefemales,theseconstituted32students.Sototalnumberofstudents=80&totalnumber ofmale students = 48.Now since half the studentswere either excellent or good, (number of averagestudents)=(numberofgoodstudents+numberofexcellentstudents)=40.Hencenumberofexcellentstudents=40–30=10. Finallysince1/3rdofmalestudentswereaverage,totalnumberofmalestudentsthatwereaverage=(1/3x48)=16andhencetotalnumberofmalestudentsthatweregood=(48–16–10)=22.
Basedontheabove revelationsthefollowingtablecanbedrawn:

	Performance			Total
	Average	Good	Excellent	
Male	16	22	10	48
Female	24	8	0	32
Total	40	30	10	80

Q1.a Numberofstudentswhoarebothfemale&excellent=0.

Q2.c Numberofstudentswhoarebothmaleandgood=22.

Q3.d Ratioofmaletofemaleamongaveragestudents=16:24=2:3.

Q4.b Proportionoffemalestudentswhoaregood=(8/32)=0.25.

Q5..b Proportionofgoodstudentswhoaremale=(22/30)=0.73.

Solution for Q6 to Q9 :
From the data that is given we can find the following data: (the explanation of how the following values were arrived at is given after the table).

Item	1984-85	1985-86
Food (Percentage)	22%	23%
Food (Value)	4928	5934
Manufactured Articles	11648	11352
Raw Material	5824	8514
Total Value of Exports in Crore of Rs.	22400	25800

Q6. d
Food related exports in 85-86 = 0.23x25800 = 5934. So food related exports in 1984-95 = (5934 – 1006) = 4928.
Hence Percentage of food related exports in 84-85 = 4928/22400 = 22%.
Q7. b
In 84-85, Value of Manufactured articles & Raw materials exports = (22400 – 4928) = Rs.17472 crores.
Since Export in manufactured goods is twice that of raw materials, Rs.17472 has to be divided in the ratio 2:1. viz.
Export of manufactured goods = Rs.11648 crores and Raw materials = Rs.5824 crores.
Hence the difference between raw material and food = (5824 – 4928) = Rs.896 crores.
Q8. d
In 85-86, the combined percentage of Manufactured articles and Raw materials = 77% and this is in the ratio 4 : 3.
Hence percentage of Manufactured articles export = 44% and that of Raw materials export = 33%. Hence value of
manufactured = 0.44x25800 = Rs.11352 crores and the value of Raw materials = Rs.8514 crores. Hence percentage
difference between the value of Raw materials between 84-85 and 85-86 = [(8514 – 5824)/8514] × 100 = 31.6%
Q9. a
The change in the value of exports from 84-85 to 85-86 = (11648 – 11352) = Rs.296 crores.

Solutions for Q10 to Q13:
Q10. 4
Tara received same grade in 3 courses. We already know that Tara has got B grade in one of the subject and GPA is 2.4.
So in 3 courses in which he scored same grade is B. So Tara has received the same grade as Manab.
Q11. 1
GPA of Preeti = 3.2

i.e. $\dfrac{F+D+X+D+Y}{5} = 3.2$

0 + 2 + x + 2 + y = 16
x + y = 12

So only combination possible is A, A.
So Preeti obtained A grade in statistics.

Q12. 3
As Fazal GPA = 2.4
So D + F + B + P + D = 2.4 × 5
2 + 0 + 4 + P + 2 = 12
P = 4
So his grade in strategy is B.
So Grade of Utkarsh in marketing is also B.
So for Utkarsh, x + B + F + C + A = 3 × 5
x + 4 + 0 + 3 + 6 = 15
x = 2
So grade of Utkarsh in finance = D.

Q13. 2
GPA of Gowri is 3.8
i.e. 3 + 3 + 6 + x + 4 = 3.8 × 5
16 + x = 18
x = 2
So in strategy, Gowri's grade is C.
Rahul's grade in strategy = (4.2 × 5) – 15 = 6, i.e., A.
Fazal's grade in strategy = (2.4 × 5) – 8 = 4, i.e., B.
Hence, Gowri's grade will be higher than that of Hari.

Solution for Q14 to Q17 :
Q14 This percentage can be determined using the derivation of the first questi
The percentage of vegetarians in class 12 = 32 × 100/80 = 40%
Hence, option 1.

Q15. Vegetarian Males in Class 12 = 0.25 × 48 = 12
∴ Non-vegetarian Males in class 12 = 36
∴ Vegetarian females in class 12 = (80 – 48) – 12 = 20
∴ Required difference = 16
Hence, option 5.

Q16. From the table given in the question,
Total students = 800
Students in Secondary = 0.8 × 800 = 640
Students in Class 11 = (800 – 640)/2 = 80
Students in Class 12 = 80
Males in Class 11 = 0.55 × 80 = 44
Males in Class 12 = 0.6 × 80 = 48
∴ Males in Secondary = 0.475 × 640 – 44 – 48 = 288
Vegetarians in Class 11 = 0.5 × 80 = 40
Vegetarians in Secondary = 0.55 × 640 = 352
Vegetarians in Class 12 = 800 × 0.53 – 40 – 352 = 32
Now, the percentage of male students in secondary section = 288 × 100/640 = 45%
Hence, option 2.

Q17. (This question was not considered for evaluation as there was an error in the question)
"50% of the students are vegetarian males" contradicts the data given initially.
Interpreting it as "50% of the males are vegetarian", we have the following:
In secondary,
Vegetarian males = 144
Non-vegetarian males = 144
Vegetarian females = 352 –144 = 208

Non-vegetarian females = 352 – 208 = 144

∴ Except vegetarian females, all other groups have same number of students.

Hence, option 3.