STA201 Assignment 1

Question 1

The following table shows some information on a variety of different vehicles. Using the information given in table 1, answer question 1a – 1d

Table 1: Vehicles

Model	Engine size	Cylinders	Transmission	Number of gears	Fuel	Vehicle Class	City MPG	Hwy MPG	Model Year
ACURA RDX	3.5	6	Automatic	6	Gasoline	small SUV	19	28	2010
HYUNDAI Sonata	1.6	4	Manual	7	Gasoline	large car	28	38	2015
Ford Fiesta	1.6	4	Manual	5	Gasoline	Small car	28	36	2006
DODGE Challenger	6.4	8	Automatic	8	Gasoline	midsize car	14	25	2010
BMW X5 xDrive35i	3	6	Automatic	8	Gasoline	standard SUV	18	24	2013
HONDA Accord	3.5	6	Automatic	6	Gasoline	midsize car	21	32	2014
LAND ROVER Range Rover	3	6	Automatic	8	Diesel	standard SUV	22	29	2008
BENTLEY Mulsanne	6.8	8	Automatic	8	Gasoline	midsize car	11	18	2012
MAZDA CX-5	2.5	4	Automatic	6	Gasoline	small SUV	24	30	2013
PORSCHE Cayman GTS	3.4	6	Manual	6	Gasoline	small car	19	26	2015

1a)

i. How many variables are listed in table I?

ii. Classify the variables according to their types (Qualitative / Quantitative).

1b)

Construct a frequency distribution table to represent the summary information of the variable "Vehicle Class" and determine proportion of midsize cars.

1c)

Complete the following table and answer the questions

Table: Frequency distribution of Transmission by Vehicle Class

Transmission	Vehicle Class					Total
	Small Car	Midsize Car	Large Car	Small SUV	Standard SUV	
Automatic						
Manual						
Total						

i. What is the modal response for the variable "Transmission"?
ii. What proportion of vehicles are "Small Car"?
iii. What proportion of Manual vehicles are "Standard SUV"?
iv. What proportion Large Cars are Automatic?
v. Construct a side by side bar chart to represent the information given in the table 3.

1d)

Complete the following table and answer the questions

Table: Frequency distribution of City MPG

City MPG	Tally	Frequency	Relative frequency	Cumulative relative frequency
10 - 15				
15 - 20				
20 - 25				
25 - 30				

i. What proportion (Percentage) of vehicles has mileage between 10 and 20 MPG
ii. What proportion (Percentage) of vehicles has mileage greater than 20 MPG
iii. Construct Histogram to display the data represented in table 4.

Question 2:

Complete the following table.

Grades on Statistics examination	Frequency	Relative Frequency	Percentage
A: 90 – 100		0.08	
B: 80 – 89	32		
C: 65 – 79	94		
D: 50 – 64	31		
F: Below 50	27		
Total	200	1.00	

Question 3:

The following information, extracted from a survey of a Microfinance institution (MFI) represents the amount of loan request of 50 potential borrowers from any particular branch of that MFI.

1745	9250	6100	4500	5200	1420	6100	6500	6999	6780
3100	7475	3425	4950	3231	6100	6480	7050	9900	4790
4400	8100	6900	3865	5556	4859	6999	6780	8050	9900
8620	6600	9980	4800	8855	5650	1200	4790	6500	8050
2495	7300	8050	6200	7155	4980	8050	7400	7050	1500

For the given data construct a suitable frequency distribution table featuring the following components

i. Class mid value
ii. Tally Bars
iii. Frequency
iv. Relative frequency
v. Cumulative frequency
vi. Cumulative relative frequency

Using the aforementioned information also answer the following

a. Determine the number of loan request between tk. 3000 - 5000
b. Determine the proportion of loan request between tk. 3000 - 5000.
c. Determine the number of loan request below tk. 8000.
d. Determine the proportion of loan request below tk. 8000.

Question 4

The following table shows the estimated number of tigers left in the South Asian region.

Country	**Estimate**
India	3,346
Bangladesh	500
Bhutan	124
Nepal	274

a. Construct a relative frequency table for the data.
b. Display the frequencies in a bar graph.
c. Display the frequencies in a pie chart.
d. What proportion of the remaining tigers are in Bangladesh? Nepal?

Question 5

The following data set represents the scores on intelligence quotient (IQ) examinations of 40 sixth-grade students at a particular school:

141	97	111	135	133	112	113	131	134	99
104	106	113	100	108	103	118	132	136	118
101	122	98	109	132	110	99	112	97	142
95	127	107	144	126	133	96	119	98	139

a. Organize the data in classes such as 90 – 100, 100 – 110 and so on.
b. Present the data set in a frequency histogram.