1) Based on the videos and the reading material, how would you define a data scientist and data science? (**3 marks**)

I found the videos and the reading material very interesting and informative.

- I would define that Data Science is the art of uncovering the insights and trends that are hiding behind data. Where the data scientist in that artist.
- Data Scientist is the professional who possesses a diverse skill set that includes advanced knowledge of statistics, mathematics, probability, strong problem solving abilities, programming languages and tools, Databases, effective communication skills, storytelling and much more.
- A Data Scientist is able to analyze complex datasets, extract meaningful insights, create predictive models and deliver the actionable insights in the form of story.

2) As discussed in the videos and the reading material, data science can be applied to problems across different industries. Give a brief explanation describing what industry you are passionate about and would like to pursue a data science career in? (**2 marks**)

1. I would prefer working for the **Defense** Sector as a data scientist. I personally found it Exciting to work in such field. I would like to contribute my knowledge with data science, analyze data, extract actionable insights and provide it to the concerned authorities.
2. Also I would like to work in healthcare and financial sectors.
   1. In **healthcare**, data science is being used to improve patient outcomes by analyzing electronic health records (EHRs) and medical imaging data to develop predictive models for disease treatment.
   2. In **Financial**, data science is being used to detect fraudulent transactions, identify market trends, and other trading strategies.

Ultimately, these sectors or the industries align with my interest and passion and I would like to pursue a data science career.

3) Based on the videos and the reading material, what are the **ten** main components of a report that would be delivered at the end of a data science project? (**5 marks**)

The ultimate purpose of analytics is to communicate findings to the concerned who might use these insights to formulate policy or strategy. For this there must be a detailed report that contains details about the work which is systematically sectioned in various components.

Even if you expect the report to be brief, sporting five or fewer pages, the deliverable follow a prescribed format including the cover page, table of contents, executive summary, detailed contents, acknowledgments, references, and appendices (if needed).

- At a minimum, the **cover page** should include the title of the report, names of authors, their affiliations, and contacts, the name of the institutional publisher (if any), and the date of publication. Missing the date of publication, making it impossible to cite them without the year and month of publication. Having contact details at the front makes the task easier.
- **A table of contents (ToC)** is like a map needed for a trip never taken before. The ToC with main headings and lists of tables and figures offers a glimpse of what lies ahead in the document.
- Never shy away from including a ToC, especially if your document, excluding cover page, table of contents, and references, is five or more pages in length.
- Even for a short document, I recommend an **abstract** or an **executive summary**. Nothing is more powerful than explaining the crux of your arguments in three paragraphs or less. Of course, for larger documents running a few hundred pages, the executive summary could be longer. An "introductory section" is always helpful in setting up the problem for the reader who might be new to the topic and who might need to be gently introduced to the subject matter before being immersed in intricate details.
- In the **methodology** section, you introduce the research methods and data sources you used for the analysis. If you have collected new data, explain the data collection exercise in some detail.
- The **results** section is where you present your empirical findings. Note that many reports in the business sector present results in a more palatable fashion by holding back the statistical details and relying on illustrative graphics to summarize the results.
- The results section is followed by the **discussion** section, where you craft your main arguments by building on the results you have presented earlier. The discussion section is where you rely on the power of narrative to enable numbers to communicate your thesis to your readers.
- Of course, not all analytics return a smoking gun. At times, more frequently than I would like to **acknowledge**, the results provide only a partial answer to the question and that, too, with a long list of caveats.
- In the **conclusion** section, you generalize your specific findings and take on a rather marketing approach to promote your findings so that the reader does not remain stuck in the caveats that you have voluntarily outlined earlier.
- What remains is housekeeping, including a list of references, the acknowledgment section (acknowledging the support of those who have enabled your work is always good), and **appendices**, if needed.