Q1 - 4 **points**
Q2 - 5 **points**
Q3 - 4 **points**
Q4 - 3 **points**
Q5 - 4 **points**

Q6 **(3+2=5 points). For a while now, NASA has been conceptualizing a network called the Interplanetary Internet, which could come in handy 'someday' when we colonize Mars [when pigs fly out of our butts :)]. If that were to come to fruition, Eric Brewer's 'CAP theorem' would be highly relevant and applicable to such a distributed system of nodes. As per the CAP theorem, 'you can't always get what you want' (at least not C,A,P all at once, all equally guaranteed).**
In an Interplanetary Internet, how would you rank C,A,P in terms of concerns? In other words, which would we worry about most, and relatively which, the least? You need to state why (justify your ordering).

The most ideal order is Partition Tolerance (highest concern/priority), Availability, Consistency (lowest concern/priority) or (P,A,C). The order (A,P,C) is also acceptable.
Points are given as follows:
- 0.5 : For incorrect order.
- 0.5 : For incorrect acronym expansion for any/all of C, A, P.
- 2 : For incorrect reasons. 1 for justification of each - **the most** and **the least** important concern.
Also, -0.5 if the order in incorrect, the justification wouldn't make sense for either one of the most important concern or the least important concern. Similarly, if the full-form for any of C, A, P is incorrect.

Where might nodes be located, for an Interplanetary Internet? And, what disaster scenarios can you envision (that affect the network)?
Nodes can be located on planets, satellites or different places on earth. Also, locations of the nodes should be explicitly mentioned.

Disaster scenario should be practical and making sense in the given scenario like meteoroid strike, technical problems in satellite, node breakdown on earth due to natural calamity, etc. Replies like "End of universe", "Big Bang", "Black Hole", etc. should not be considered towards a valid answer.
Points are given as follows:
- 1 : incorrect location information.
- 0.5 for each impractical/incorrect disaster scenario. At least two disaster scenarios are required.

Q7 - 5 **points**

Q8 (5 points): Here are a pair of tables – a PRODUCTS table that lists products a company sells, and SALES, which records sales of the products 9each unit of a product that is sold, gets a separate row in SALSES):

PRODUCTS (PRODUCT_ID, PRODUCT_NAME);

SALES (SALE_ID, YEAR, PRODUCT_ID, PRICE);

Consider the following three queries, we're calling them Q1, Q2, Q3. In Q2, fyi, 'SELECT 1' returns a 1, which we can ignore (it is not essential to our query).

Q1:

```
SELECT S.PRODUCT_ID,SUM(PRICE)
FROM SALES S
        JOIN
        PRODUCTS P
        ON (S. PRODUCT_ID = P.PRODUCT_ID)
GROUP BY S.PRODUCT_ID;
```

Q2:

```
SELECT S.PRODUCT_ID, SUM(PRICE)
FROM SALES S
WHERE EXISTS
(
        SELECT 1
        FROM PRODUCTS P
        WHERE P.PRODUCT_ID = S.PRODUCT_ID
)
GROUP BY S.PRODUCT_ID;
```

Q3:

```
SELECT S.PRODUCT_ID,SUM(PRICE)
FROM SALES S
WHERE S.PRODUCT_ID IN
(
        SELECT PRODUCT_ID
        FROM PRODUCTS P
)
GROUP BY S.PRODUCT_ID;
```

Circle the correct choice below:

a. Q1, Q2, Q3 are all different (they produce different results)

b. Q1, Q2, Q3 are all identical

c. Q1 and Q2 are identical

d. Q1 and Q3 are identical

e. Q2 and Q3 are identical

Choice “b” is the correct solution. The selection is performed using PRODUCT_ID key from both P and S tables and grouped together.

No partial marks.

-5: for incorrect answer

Bonus - 1 point

Answer: **‘a’** (+1 point)

-1 wrong answer, No fractional points