1. **BIG DATA :-** As the term suggest itself it is the data which is big in size, or we can say the amount of data which is that huge in size which can not be handled by traditional tools like C and C++.

   This type of data is in different formats and to use that data and extract some specific information from that we require some tools which are appropriate for this type of data such as HADOOP.

Evolution of Big Data:- As technology getting advance day by day and everyone is getting connected to internet now a days so there are lots of data producing every single second.

Upto 2003 5 billon gigabytes of data is produced, but as the technology evolving pretty fast .. this amount is continuously increasing and now we r generating this much of data only in 10 mints .. and this mark is upto 2014 only.

2. **Three v's in BIG DATA:-** This 3 V stands for
   A. Variety
   B. Velocity
   C. Volume

Variety:- This term means the data is available in 2 forms..

1. Structured : - The data which is available in Rows and columns .. which is organized well but slow to access and perform operations on that E.g. SQL data
2. Unstructured :- This type of data is unstructured but is quite fast to access and perform operations on that E.g. MonogoDB. We are producing heterogeneous data which is unstructured.

Velocity:- This plays an imp. Role in BIG data. The speed of processing of data and providing appropriate result to us on time is imp. Where this "V" comes in place.

For E.g in banking transaction this plays a imp. Role nearly millions of transactions done in every single mint and to find out which is valid transaction and which is not? This comes in places.

Volumne:- It refers to the size of data where the amount data is huge in every single mint we r producing E.g social site .. millions of messages and quotes shared every single second and to store and analyze that huge amount of data we requires big systems.

Every single mint thousand hours of data is streamed over platforms like youtube, Netflix etc.

All these 3 V's makes the data processing possible and more efficient.

3.**Major Applications of Big Data:-**

1. **In Banking**:- In banking we can analyze the behavior of customer as respect to their transaction basis weather they r loyal to bank or not/customer requires a loan or not/ customer eligible for loan or not.

   Offer based Cards:- to provide them offer based on their transaction Nature, where he is spending the money or not banks can suggest some specific type of cards on basis of their transactions.

   Fraud Detection:- Based on customer's spending nature, banks can identify weather the transaction is usual for customer's behavior. With this fraud transactions risk can be reduced.

2. **Retialing:-** On the basis of customer's shoping habbit, recommendation of products takes places,

   Offers:- Suggesting offers on the basis of their shoping habbits, and product recommendation in online surfing.

   Basket Analysis:- product recommendation based on what customer is buying by providing suggestions of other customers buying habit.

3. **Communication:-** Data can be extracted from the texts what 2 customers are talking about and analyzing what they actually talking over.

   Terrorism:- teams are tracking what type of communication is going all over the world to stop terrorism some specific algorithms are there to analyze what messages are transferring between 2. And by tracking and analyzing the terrorist attacks can be tracked and stopped before they happing.

   Production recommendation:- Sometimes we see we are getting add of some product which we can't even searched on internet but talked to someone about that. That happens because of that communication tracking.

4. **Question 4**

1. **Healthcare:-** Making prediction on the health and history of their medical condition.
   a. To finding the treatment in serious disease like cancer, the big data analysis is used .. by reviewing the result of other patients treatments, doctors can better predict what type of treatment is speficly suitable for a patient.
   b. Recently in developing of corona vaccines data of thousands of peoples are used like which type of vaccines behaving to different types of peoples and find out the success rate of vaccine.

2. **Education:-** As new laws comes in india and to predict which subject is suitable to a student .. institutions can recommend on the basis or their previous performance in specific modules.
   a. Companies can get the desired candidates in their interviews by filtering out on the basis of their requirement.
   b. Grading system can be improved by analyzing the data.

3. **Manufacturing and natural resources:-**

   a. Quality production:- By analyzing the samples of produced products we can predict how much of improvement is needed.

   b. **Which Product Which Time:-** Product demand is predicted like in winters cold drink demands decreases so we can better predict how much amount is produced so the industries can sell the product in market effortlessly and makes the maximum profit possible at that time.

4. **Government:-** In elections it plays a important role of exit polling which we sees on new channels very frequently
   Based on tweets posts comments we can predict that peoples are showing interest in which political parties.

5. **Insurance:-** By using this we can analyse what type of insurance a person can needed weather it is life insurance.. based on their retierement plans.. agents can better suggest the plans.
   By analyzing what A customer is claiming from insurance company whether it is appropriate to claim or not .. more or less sometime even the comaony employees used to claim fake claims from the company and making money from it.

6. **Transportation:-** Companies across many transportation and travel segments like airlines, airports, freight logistics, hospitality, railways, and others are enjoying the benefits of big data in handling a large amount of data that they hold. In this interconnected and instrumented world at present, every industry along with the transportation segment captures an extraordinary amount of data. So, the benefits of big data and analytics help the transportation firms to precisely enhance the model capacity, demand, revenue, pricing, customer sentiments, cost and lot more.