

E. Match the impact of AI in column A with their application area in column B.

- | | |
|------------------------------------------|------------------------|
| 1. Adaptive learning and smart teaching. | a. Sports |
| 2. AI enabled IVRS. | b. Media/Entertainment |
| 3. Developing better game strategy. | c. E-commerce |
| 4. Comparing items purchased by user. | d. Education |
| 5. Automatic multilingual subtitles. | e. Customer support |

Ans: Correct match:

Sl.	Impact of AI	Application area
1	Adaptive learning and smart teaching	Education
2	AI Enabled IVRS	Customer Support
3	Developing better game strategy	Sports
4	Comparing items purchased by user	e-commerce
5	Automatic multilingual subtitles	Media/entertainment

Interactive Voice Response System : IVRS

Answer the following Questions:

1. List main Capabilities of AI.

Ans: Core AI capabilities are -

- **Reasoning and problem-solving:** AI can use logic to make decisions and solve problems.
- **Perception:** AI systems can interpret their environment using sensors, analyzing images, sound, and other data.
- **Learning and adaptation:** AI models can learn from data and experience to improve over time, adapt to new situations, and modify their behavior for better efficiency.
- **Automation:** AI can automate tasks, from simple repetitive ones to complex workflows, to increase efficiency and reduce human error.
- **Data analysis:** AI can process and analyze vast amounts of data to find patterns and relationships that humans might miss, enabling more intelligent decision-making.
- **Natural Language Processing (NLP):** AI can understand, interpret, and generate human language, enabling applications like translation, chatbots, and text-to-speech.
- **Computer Vision:** This allows AI to "see" and interpret visual information from images, videos, and other visual inputs, with uses in facial recognition, quality control, and medical imaging analysis.

- **Generative capabilities:** Advanced AI can create original content, including text, images, music, and code.

Q2. What is NLP? How does it support in Education & Customer support field?

Ans: **NLP (Natural Language Processing)** is a branch of AI that helps computers understand and interact with human language.

In Education: It powers tools like automated grading, grammar checkers, personalized learning apps, and chat-based tutoring.

In Customer Support: It enables chatbots, sentiment analysis, automated ticketing, and faster, more accurate responses to customer queries.

Q3. Briefly discuss the ways in which AI can help in E-Commerce Industry.

AI helps the **E-Commerce industry** in several key ways:

- a) **Personalized Product Recommendations** – Suggests products based on user behavior and preferences.
- b) **Chatbots & Virtual Assistants** – Provides 24/7 customer support and quick responses.
- c) **Smart Search** – Improves product search with NLP, voice search, and image-based search.
- d) **Inventory & Supply Chain Optimization** – Predicts demand and manages stock efficiently.
- e) **Fraud Detection** – Identifies suspicious transactions and protects users.
- f) **Dynamic Pricing** – Adjusts prices based on demand, competition, and trends.
- g) **Customer Behavior Analysis** – Helps businesses understand buying patterns and improve marketing strategies.

D. Answer the following questions.

1. List main capabilities of AI.
2. What is NLP? How does it help in education and customer support field?
3. Briefly list the ways in which AI can help in E-Commerce industry.
4. How do NLP, Data Vision and Machine learning help in research and development field?

Q4. How do NLP, Computer Vision & Machine Learning help in research and development field?

Ans: **NLP, Computer Vision, and Machine Learning** help R&D by automating data analysis, extracting insights from text and images, speeding up experiments, improving predictions, and enabling smarter decision-making based on large datasets.