Introduction to Generative AI Class 9 Questions and Answers

Introduction to Generative AI Class 9 Important Questions

Important Questions of Introduction to Generative AI Class 9 – Class 9 Introduction to Generative AI Important Questions

Subjective Type Questions

Question 1.
What do you understand about Generative Artificial Intelligence? Give any two examples.
Answer:
Generative Artificial Intelligence refers to AI systems that can create new content, such as text, images, audio, and more, by learning patterns from existing data. Examples include:

- GPT-4 A language model developed by OpenAI that can generate coherent and contextually relevant text based on a given prompt.
- DALL-E Another AI by OpenAI that generates images from textual descriptions, creating unique visuals based on the input provided.

Question 2.
Write any two AI tools each for the followingGenerative AI image generation tools Generative AI text generation tools Generative AI audio generation tools
Answer:
Generative AI Image Generation Tools

- DALL-E Created by OpenAI, it generates images from textual descriptions using deep learning techniques.
- Midjourney A research lab and service known for its powerful AI capable of creating art and images based on text prompts.

Generative AI Text Generation Tools

- GPT-4 Developed by OpenAI, it generates coherent and contextually relevant text based on user prompts.
- Jasper An AI content platform designed to help with copywriting, blog posts, and other text generation tasks.

Generative AI Audio Generation Tools

- OpenAI’s Jukedeck An AI tool for creating custom music tracks for various uses, like videos and presentations.

- AIVA (Artificial Intelligence Virtual Artist) Composes original music across various genres, often used for soundtracks and media projects.

Question 3.
Give full forms of the following-
1. GANs
2. VAEs
3. RNNs
Answer:
The full forms of the given acronyms are :
1. GANs Generative Adversarial Networks
2. VAEs Variational Autoencoders
3. RNNs Recurrent Neural Networks

Question 4.
How Generative AI can be helpful in following fields-
1. Architecture
2. Coding
3. Music
4. Content Creation
Answer:
Generative AI can be highly beneficial in the following fields
1. Architecture Generative AI can assist in creating innovative design concepts, optimizing structural layouts, and generating complex, sustainable architectural forms that consider environmental factors.

2. Coding It can automate code generation, offer intelligent code suggestions, and debug programs, enhancing developer productivity and reducing the time required for software development.

3. Music AI can compose original music, create accompaniments, and assist in sound design, helping musicians and producers generate new melodies and harmonies or explore novel musical styles.

4. Content Creation Generative AI can produce written content, create graphics, and generate videos, aiding content creators by providing ideas, drafting initial versions, and enhancing creativity and efficiency.

Question 5.
Sakshi has been assigned a homework essay on the topic, “The Impact of Climate Change on Coral Reefs.” The essay requires Sakshi to research and explain various aspects of climate change, such as ocean acidification and rising sea temperatures, and their effects on coral reef ecosystems. His friend suggested using some text generation tool. List some guidelines for Sakshi to prevent misuse of Generative AI and use it

constructively.
Answer:
Some guidelines for Sakshi to use generative AI constructively and avoid misuse are:

1. Use as a Supplement Use AI-generated content as a starting point or for inspiration, not as the final submission.
2. Verify Information Cross-check AI-generated facts with credible sources to ensure accuracy.
3. Add Personal Analysis Incorporate personal insights and analysis to make the essay original and reflective of her understanding.
4. Cite Sources Properly cite any information or ideas derived from AI tools to maintain academic integrity.
5. Learn from the Content Use the AI output to learn and expand knowledge on the topic, not to bypass the research process.
6. Edit Thoroughly Review and edit the AI-generated content for coherence, relevance, and alignment with the essay requirements.
7. Avoid Plagiarism Ensure that the essay is her own work and does not simply replicate AI-generated text.

Question 6.
How do you think generative AI can revolutionize the creative industry, such as art and fashion, by enabling the generation of unique and innovative designs?
Answer:
Generative AI can be a game-changer for creative industries by:

- Automating repetitive tasks AI can handle things like generating variations on a theme, freeing up artists to focus on conceptual ideas.
- Creating unique designs AI can produce entirely new design elements, pushing creative boundaries.
- Democratizing creativity AI tools can allow anyone to create professional-looking content, fostering a wider creative pool.

Question 7.
Considering the ethical challenges associated with generative AI, what are your thoughts on establishing guidelines or regulations to ensure responsible use of these technologies? How can we balance the potential benefits and risks?
Answer:
Generative AI presents exciting possibilities but also ethical landmines. Here's why guidelines and regulations might be necessary:

1. Curbing Misinformation Generative AI can create incredibly realistic deepfakes or text that can be misused to spread misinformation. Guidelines could stress transparency about AI-generated content and fact-checking mechanisms.
2. Taming Bias AI reflects the biases in its training data. Regulations could mandate diverse training datasets and bias detection tools to mitigate unfair or discriminatory outputs.

3. Protecting Privacy and IP Generative AI might raise privacy concerns if trained on personal data. Regulations could require user consent and data anonymization. Copyright laws might also need revising to address AI-generated content.
4. Ensuring Accountability Who's responsible if AI-generated content causes harm? Guidelines could establish accountability for developers and users based on the intended use of the AI.
5. Balancing benefits and risks requires a nuanced approach :
   Transparency Clear labeling of AI-generated content helps users discern real from artificial.
6. Human Oversight AI should be a tool, not an autonomous decision-maker. Human oversight can ensure ethical application.
7. Impact Assessments Before deploying generative AI, assess its potential societal impacts to identify and mitigate risks.
8. Public Education Increasing awareness of generative AI's capabilities and limitations can help people navigate the information landscape more critically.
9. Generative AI is a powerful tool, and responsible use is key. By establishing guidelines and fostering open discussions, we can harness its potential for good while minimizing the risks.

Introduction to Generative AI Very Short Answer Type Questions

Question 1.
What is the main function of Generative AI?
Answer:
To create new things based on learned data.

Question 2.
When was the concept of machines reasoning like humans introduced?
Answer:
1950, by Alan Turing.

Question 3.
What was the breakthrough in generative AI in 2014 ?
Answer:
Creation of GANs for high-quality image generation.

Question 4.
What is the key characteristic of deep learning?
Answer:
Learning from vast amounts of unlabeled data.

Question 5.
What is GAN and its function?
Answer:
Generative Adversarial Network, creates new data like images.

Question 6.
What was the milestone in audio generation in 2016?
Answer:
Introduction of WaveNet by DeepMind.

Introduction to Generative AI Short Answer Type Questions

Question 1.
What are some examples of Generative AI models and their applications?
Answer:
Generative AI models like GPT-3, DALL-E, and GANs have various applications. GPT- 3 can generate human-like text, DALL-E creates images from textual descriptions, and GANs produce realistic images. These models find applications in art, design, writing, music composition, and more.

Question 2.
How has Generative AI evolved over the years, and what are some significant milestones in its development?
Answer:
Generative AI has evolved significantly since its inception. Milestones include the creation of ELIZA chatbot in 1964, GANs in 2014 for high-quality image generation, and GPT-3 in 2020 for generating coherent text. These milestones have pushed the boundaries of what AI can achieve creatively.

Question 3.
What are the advantages of using Generative AI in various industries?
Answer:
Generative AI offers benefits like enhanced creativity, automation of tasks, personalized experiences for users, and innovation in fields like healthcare and gaming. It can also lead to cost reduction and improved efficiency in businesses.

Question 4.
What are some popular Generative AI tools available for users, and how can they be utilized?
Answer:
Popular Generative AI tools include GPT-3 for text generation, DALL-E for image generation, and MuseNet for music composition. These tools can be utilized for tasks like content creation, design, code generation, and storytelling, among others.

Question 5.
How do Generative AI models contribute to innovation and problem-solving in various domains?
Answer:
Generative AI models contribute to innovation by generating new ideas, automating tasks, aiding in decision-making through simulations, and optimizing processes. They find applications in drug discovery, game development, language translation, and more.

Introduction to Generative AI Long Answer Type Questions

Question 1.
How has Generative AI evolved over time, and what significant milestones mark its progression?
Answer:
Generative AI has evolved significantly since its inception. Key milestones include the creation of ELIZA in 1964, marking one of the first functioning generative AIs, and the development of GANs in 2014, which revolutionized image generation. Additionally, the introduction of GPT models by OpenAI in 2018 and subsequent iterations like GPT-3 and GPT-4 have propelled text generation capabilities to new heights. These milestones have reshaped the landscape of Generative AI, pushing boundaries and unlocking new creative potentials.

Question 2.
What distinguishes Generative AI from conventional AI, and what advantages does it offer across various industries?
Answer:
Generative AI, unlike conventional AI, relies on data-driven learning to create new content rather than following predefined rules. Its strengths lie in creativity, adaptability, and potential for generalization.

Across industries, Generative AI offers benefits such as enhanced creativity in art and design, efficiency and automation in customer service, personalized marketing, innovation in science and medicine, improved accessibility, problem-solving, and decision-making, enhanced user experience, and economic impact through cost reduction and innovation.