Q.1. A JSON file for a movie streaming platform is provided below.  
  
Write the REST API endpoints (based on the Open API specification) for all the CRUD operations, assuming that the API is hosted at 'https://movies.com/api/streaming'. Provide the request body where appropriate. [5 marks]  
  
JSON File  
{  
 "streaming": {  
 "name": "StreamFlix",  
 "location": "Online",  
 "movies": [  
 {  
 "title": "Inception",  
 "director": {  
 "name": "Christopher Nolan",  
 "birth\_year": 1970,  
 "nationality": "British-American"  
 },  
 "genre": {  
 "name": "Sci-Fi",  
 "description": "Science Fiction Movies"  
 },  
 "price": 3.99,  
 "stock": 100,  
 "id": 1  
 }  
 ]  
 }  
}

Q.2. Evaluate the following statements (agree/disagree) with a brief justification. [Answer should contain few bullet points of no more than 2 - 4 lines]. [4 marks]  
  
a. A microservices-based architecture is always more efficient than monolithic architecture.  
b. Continuous deployment eliminates the need for manual intervention in the release process.

Q.3. Differentiate between the following terms: Edge computing, Fog computing, and Cloud computing. Provide practical examples for all three approaches. [6 marks]

Q.4. 'QuickLearn' is a new application that offers short tutorials on various subjects. The platform supports categories like technology, arts, and business, which can be filtered by difficulty levels. Users can search tutorials, add new content, view others' contributions, rate or comment on the tutorials, and delete their own uploads. Discuss the role of DevOps and AIOps in supporting this application. [4 marks]

Q.5. A software engineer seeks guidance on selecting the appropriate API approach for specific scenarios. Briefly explain each of the following and identify scenarios in which they should be used: [6 marks]  
  
1. SOAP  
2. REST  
3. GraphQL  
4. WebSocket  
5. gRPC  
6. Server-Sent Events

Q.6. A retail organization wants to develop a predictive model to determine the likelihood of product returns. The dataset includes purchase details, customer feedback, and product ratings. Apply the CRISP-DM methodology to analyze this problem and explain each stage in detail. [5 marks]