**BIT 314 CAT Take Away (20 Marks)**

1. You are building a web application that requires user authentication. Describe how you would implement session management in PHP to maintain user sessions securely.
2. You have a form that allows users to submit their email addresses. How would you validate the email input to ensure it's in the correct format? What measures would you take to prevent SQL injection if you were to store these emails in a database?
3. You need to implement a feature that allows users to upload profile pictures. What steps would you take to ensure the uploads are secure? What file types would you allow, and how would you handle potential errors during the upload process?
4. You are tasked with creating a RESTful API using PHP. Describe how you would structure the API endpoints for a simple blog application. What HTTP methods would you use for different operations (e.g., creating, reading, updating, and deleting posts)?
5. Your application is throwing errors in production, and you need to implement a way to log these errors for later review. What approach would you take to handle errors in PHP? Would you use built-in error handling functions, or would you implement a custom solution?
6. Your application is experiencing slow load times due to database queries. Explain how you would implement caching in PHP to improve performance. What caching mechanisms or libraries would you consider using?
7. You are using PDO to interact with a MySQL database in your application. How would you handle transactions in PHP to ensure data integrity, especially when performing multiple related database operations?
8. Your application will handle sensitive user information, such as passwords and personal details. What security best practices would you implement in your PHP code to protect this data?
9. You need to use external libraries in your PHP project. Describe how you would manage these dependencies. Would you use Composer, and if so, how would you set it up?
10. You are building a new application using the MVC (Model-View-Controller) architecture. Explain how you would separate concerns in your application. Provide an example of how you would implement a simple user login feature