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**NOIDA INSTITUTE OF ENGINEERING AND TECHNOLOGY, GREATER NOIDA**  
(An Autonomous Institute Affiliated to AKTU, Lucknow)

**M.Tech Integrated**

**SEM: V - THEORY EXAMINATION (2025 - 2026)**

**Subject: Python web development with Django**

**Time: 3 Hours**

**Max. Marks: 100**

**General Instructions:**

**IMP:** Verify that you have received the question paper with the correct course, code, branch etc.

1. This Question paper comprises of **three Sections -A, B, & C**. It consists of Multiple Choice Questions (MCQ's) & Subjective type questions.

2. Maximum marks for each question are indicated on right -hand side of each question.

3. Illustrate your answers with neat sketches wherever necessary.

4. Assume suitable data if necessary.

5. Preferably, write the answers in sequential order.

6. No sheet should be left blank. Any written material after a blank sheet will not be evaluated/checked.

**SECTION-A**

20

1. Attempt all parts:-

- 1-a. Identify the Python library used for sending HTTP requests (CO1,K1) 1
- (a) Tkinter
- (b) Requests
- (c) CherryPy
- (d) Pyramid
- 1-b. Select the framework designed for custom web apps (CO1, K1) 1
- (a) Turbo Gears
- (b) Cubic Web
- (c) Quixote
- (d) Requests
- 1-c. Recognize the primary purpose of Django environment setup (CO2, K2) 1
- (a) Compile Python code
- (b) Set up Python and Django environment
- (c) Run JavaScript code
- (d) Install PHP
- 1-d. Recognize template tag for conditional statement (CO2, K2) 1
- (a) {% for item %} ... {% endfor %}
- (b) {% if condition %} ... {% endif %}
- (c) {{ variable }}
- (d) {% include %}
- 1-e. Select correct Django function for logout (CO3,K1) 1

- (a) `logout_user`  
 (b) `django.contrib.auth.logout`  
 (c) `auth.logout`  
 (d) `user_logout`
- 1-f. Select correct email backend for console testing (CO3, K1) 1  
 (a) `'smtp.gmail.com'`  
 (b) `'django.core.mail.backends.console.EmailBackend'`  
 (c) `'console.email.backend'`  
 (d) `'django.smtp.console'`
- 1-g. Select correct way to delete multiple objects (CO4,K2) 1  
 (a) `Model.objects.all().remove()`  
 (b) `Model.objects.filter(field=value).delete()`  
 (c) `Model.objects.delete()`  
 (d) `Model.objects.remove()`
- 1-h. Recognize correct method to read cookie (CO4, K2) 1  
 (a) `request.cookie('key')`  
 (b) `request.COOKIES.get('key')`  
 (c) `request.get_cookie('key')`  
 (d) `COOKIES['key']`
- 1-i. Pick the recommended method to store secret keys securely (CO5, K1) 1  
 (a) Environment variables  
 (b) `settings.py`  
 (c) Hard-coded  
 (d) `.gitignore`
- 1-j. Choose the Git command to stage changes before commit (CO5, K1) 1  
 (a) `git add .`  
 (b) `git push`  
 (c) `git clone`  
 (d) `git commit`
2. Attempt all parts:-
- 2.a. State the difference between GET and POST requests (CO1, K1) 2  
 2.b. Give a short note on integrating Bootstrap with Django. (CO2, K2) 2  
 2.c. Mention the use of decorators in controlling access to Django views. (CO3, K2) 2  
 2.d. Describe the process followed during deletion of objects from the SQLite database. (CO4, K2) 2  
 2.e. Illustrate creating a Heroku Procfile for a Django app. (CO5, K3) 2
- SECTION-B** 30
3. Attempt all parts:-
- 3.a. Answer any one of the following:-
- 3.a.(i) Describe the process of sending HTTP requests using the Requests library along 6

- with suitable examples. (CO1, K2)
- 3.a.(ii) Discuss serverless deployment features offered by Zappa and their importance in modern applications. (CO1, K3) 6
- 3.b. Answer any one of the following:-
- 3.b.(i) Describe the working relationship among models, views, templates, and URLs during request handling in Django. (CO2, K3) 6
- 3.b.(ii) Describe the complete workflow of creating a database-driven page using models, views, URLs, and templates in Django. (CO2, K2) 6
- 3.c. Answer any one of the following:-
- 3.c.(i) Explain the settings required to activate email functions inside a Django project. (CO3, K2) 6
- 3.c.(ii) Describe the link between forms, views, and templates in building an authentication system. (CO3, K2) 6
- 3.d. Answer any one of the following:-
- 3.d.(i) Compare sessions and cookies in Django along with suitable examples of their usage. (CO4, K4) 6
- 3.d.(ii) Illustrate the way user inputs are validated and saved into the database using Django forms and ORM. (CO4, K3) 6
- 3.e. Answer any one of the following:-
- 3.e.(i) Design a workflow to deploy a Django application from local development to Heroku, including GitHub integration. (CO5, K4) 6
- 3.e.(ii) Analyze the impact of DEBUG=True in production and propose a secure configuration for deployment. (CO5, K4) 6

**SECTION-C** 50

4. Answer any one of the following:-
- 4-a. Describe the architecture of CherryPy and its minimalist approach to building web applications. (CO1, K2) 10
- 4-b. Write a short code snippet showing how to add new items and retrieve data from each container.(CO2, K3) 10
5. Answer any one of the following:-
- 5-a. Implement a Bootstrap carousel in a Django project by embedding images or content into a template. Identify the files you modify and demonstrate how the carousel renders dynamically (CO2,K3) 10
- 5-b. Explain the advantages of Django's MTV pattern in structuring scalable and maintainable applications. (CO2, K2) 10
6. Answer any one of the following:-
- 6-a. Elaborate on security challenges commonly faced during user authentication in web applications. (CO3, K2) 10
- 6-b. Highlight the role of page restriction features in securing web applications. (CO3. K2) 10
7. Answer any one of the following:-
- 7-a. In a Django project, perform a database migration by creating and applying changes 10

to the models. Show the commands you use and explain how the migration files help maintain the database structure.(CO4, K3)

- 7-b. Analyze the process of validating form data and saving it into SQLite through Django view functions. (CO4, K2) 10
8. Answer any one of the following:-
- 8-a. A new developer joins. Design steps to safely add access to GitHub and Heroku deployment. (CO5, K3) 10
- 8-b. Analyze and compare deploying a Django application on Heroku versus AWS. Examine differences in database management, handling of static files, and scalability. Highlight the advantages and disadvantages of each platform based on these factors. (CO5, K4) 10

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