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

M.Tech Integrated

SEM: IV - 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:-

- (1.1) Identify the Python library used for sending HTTP requests [CO1, K3] 1
- (a) Tkinter
- (b) Requests
- (c) CherryPy
- (d) Pyramid
- (1.2) Recognize the GUI toolkit provided in Python [CO1, K3] 1
- (a) Tkinter
- (b) Flask
- (c) Zappa
- (d) Bottle
- (1.3) Recognize the built-in Django form used for user login. [CO2, K3] 1
- (a) AuthenticationForm
- (b) LoginForm
- (c) UserCreationForm
- (d) SessionForm
- (1.4) Identify the function used to securely log a user into a session. [CO2, K3] 1
- (a) auth_user()
- (b) session_start()
- (c) login()
- (d) connect()
- (1.5) Identify the mandatory field in the Django User model besides password. [CO3, 1

K3]

- (a) first_name
 - (b) email
 - (c) username
 - (d) None of the above
- (1.6) State how a user is logged out in a Django view. [CO3, K3] 1
- (a) delete_session(request)
 - (b) logout(request)
 - (c) request.user.logout()
 - (d) None of the above
- (1.7) Recognize correct method to create database migrations [CO4, K3] 1
- (a) python manage.py makemigrations
 - (b) python manage.py migrate
 - (c) python manage.py runserver
 - (d) python manage.py createsuperuser
- (1.8) Identify command to apply migrations to database [CO4,K3] 1
- (a) python manage.py makemigrations
 - (b) python manage.py migrate
 - (c) python manage.py syncdb
 - (d) python manage.py initdb
- (1.9) Select the command to collect static files before deploying Django app [CO5, K3] 1
- (a) python manage.py collectstatic
 - (b) python manage.py migrate
 - (c) python manage.py runserver
 - (d) python manage.py startapp
- (1.10) Choose the module that handles WSGI interface for Django apps [CO5, K3] 1
- (a) nginx
 - (b) uwsgi
 - (c) gunicorn
 - (d) apache

2. Attempt all parts:-

- (2.1) List two types of container datatypes in Python Collections [CO1,K3] 2
- (2.2) Demonstrate the process of including an email field as required in UserCreationForm. [CO2, K3] 2
- (2.3) List two security problems that Django's auth system solves. [CO3, K3] 2
- (2.4) Describe the purpose of running migrations in a Django–SQLite project. [CO4, K3] 2
- (2.5) Outline steps to register a Django project on GitHub. [CO5, K3] 2

SECTION-B

30

Answer any one of the following:-

- (3.1) Describe Falcon framework advantages [CO1, K3] 6

(3.2)	Mention six CherryPy features [CO1, K3]	6
Answer any one of the following:-		
(3.3)	Analyze the Groups and Permissions system in Django with an example. [CO2, K3]	6
(3.4)	Demonstrate the use of UserCreationForm and saving data to the database. [CO2, K3]	6
Answer any one of the following:-		
(3.5)	Describe the process of creating a custom User Registration form with an Email field. [CO3, K3]	6
(3.6)	Explain how Django handles password storage and security. [CO3, K3]	6
Answer any one of the following:-		
(3.7)	Describe the role of database migrations in Django and elaborate on the steps involved in performing them within a project. [CO4, K3]	6
(3.8)	Discuss the procedures used for retrieving data from an SQLite database in Django and presenting it to the user. [CO4, K3]	6
Answer any one of the following:-		
(3.9)	Analyze the four important pillars of Django deployment and explain their significance in cloud deployment. [CO5, K3]	6
(3.10)	Develop a step-by-step procedure for registering a Django app on GitHub and deploying it to Heroku. [CO5, K3]	6
SECTION-C		50
4. Answer any <u>one</u> of the following:-		
(4.1)	Explain advanced features of Cubic Web framework [CO1, K3]	10
(4.2)	Describe Quixote application workflow [CO1, K3]	10
5. Answer any <u>one</u> of the following:-		
(5.1)	Integrate a bootstrap in Django. Also how to create table and grid in Django (CO2, K3)	10
(5.2)	Create a guide to extend the User Model using AbstractUser for adding custom fields. [CO2, K3]	10
6. Answer any <u>one</u> of the following:-		
(6.1)	Discuss the security features provided by Django's auth (CSRF, SQL Injection, XSS). [CO3, K3]	10
(6.2)	Explain the workflow of sending an automated Welcome Email after registration. [CO3, K3]	10
7. Answer any <u>one</u> of the following:-		
(7.1)	Describe the full life cycle of database migrations in Django, including creation, execution, and maintenance in a project. [CO4, K3]	10
(7.2)	Discuss the various techniques used for retrieving data from SQLite in Django using QuerySets with suitable examples. [CO4, K4]	10
8. Answer any <u>one</u> of the following:-		
(8.1)	Automation is needed for deployment. Design a CI/CD pipeline integrating GitHub and Heroku. [CO5, K3]	10

(8.2) Developers report login issues post-deployment. Evaluate user creation and authentication settings. [CO5, K3]

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