This question paper contains **3** printed pages]

GF—20—2023

FACULTY OF COMPUTER STUDIES

B.Sc. (CS) (Third Year) (Sixth Semester) EXAMINATION

APRIL/MAY, 2023

(CBCS Pattern)

COMPUTER SCIENCE

Paper S6.CC.2

(Android Programming)

(Tuesday, 25-4-2023) **Time : 10.00 a.m. to 1.00 p.m.**

Time—Three Hours *Maximum Marks*—75

N.B. :— (*i*) Figures to the right indicate full marks.

(*ii*) Assume suitable data, if required.

(*iii*) All questions are compulsory.

1. Attempt any *five* of the following : 15

(*a*) Explain dialog activity.

(*b*) Explain edit text control.

(*c*) What is option menu ?

(*d*) Explain preference activity.

(*e*) Explain drawable animation.

P.T.O.

(*f*) What is activity ?

(*g*) Explain toggle button.

2. Attempt any *two* of the following : 10

(*a*) Explain installing android studio.

(*b*) Write a program to demonstrate push notification.

(*c*) Explain android stack.

3. Attempt any *two* of the following : 10

(*a*) Explain localization with example.

(*b*) Explain activity life cycle.

(*c*) Explain android operating system features.

4. Attempt any *two* of the following : 10

(*a*) What is shared preference ?

(*b*) Explain status bar notification.

(*c*) Write a short note on intents.

5. Attempt any *two* of the following : 10

(*a*) Write a program to demonstrate alert dialog.

(*b*) What is pending intent ? Explain with example.

(*c*) Explain using GPS to find current location.

6. Attempt any *two* of the following : 10

(*a*) Explain SQLite database.

(*b*) Explain button control with example.

(*c*) Explain context menu with example.

7. Attempt any *two* of the following : 10

(*a*) Explain android application structure.

(*b*) Explain publishing android application.

(*c*) Explain android manifest.xml file.

This question paper contains **2** printed pages]

GF—11—2023

FACULTY OF SCIENCE AND TECHNOLOGY

B.Sc. (CS) (Sixth Semester) EXAMINATION

APRIL/MAY, 2023

(CBCS Pattern)

COMPUTER SCIENCE

(Cloud Computing)

(Friday, 21-4-2023) **Time : 10.00 a.m. to 1.00 p.m.**

Time—Three Hours *Maximum Marks*—75

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) Figures to the right indicate full marks.

(*iii*) Assume suitable data, if required.

(*iv*) Use of any electronic media such as mobile phone, digital diary and electronic calculator is not permitted.

1. Attempt any *five* of the following (**3** marks each) : 15

(*a*) Write a short note on client server architecture.

(*b*) Write a short note on Dev 2.0 platform.

(*c*) Write a short note on Microsoft Azure.

(*d*) Write a short note on SOAP services.

(*e*) Write a short note on Big Table.

(*f*) Write a short note on REST service.

(*g*) Write a short note on parallel computing.

P.T.O.

2. Attempt any *two* of the following : 10

(*a*) Explain Mainframe architecture.

(*b*) Explain Successful SaaS architecture.

(*c*) Explain platform as a service.

3. Attempt any *two* of the following : 10

(*a*) Explain web services SOAP and REST.

(*b*) Explain AJAX; asynchronous 'rich' interface.

(*c*) Explain cloud file system : GFS and HDFS.

4. Attempt any *two* of the following : 10

(*a*) Define MapReduce model.

(*b*) Explain HBase and Dynamo.

(*c*) Explain Relational database.

5. Attempt any *two* of the following : 10

(*a*) Explain Internet of services.

(*b*) Explain 3-tier architecture with TP monitor.

(*c*) Explain Infrastructure as a service : Amezon EC2.

6. Attempt any *two* of the following : 10

(*a*) Explain Mashups : user interface services.

(*b*) Explain cloud data store.

(*c*) Explain parallel efficiency of MapReduce.

7. Attempt any *two* of the following : 10

(*a*) Explain Internet technology and web-enabled applications.

(*b*) Explain web application servers.

(*c*) Define cloud computing with example.

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GF—36—2023

FACULTY OF SCIENCE AND TECHNOLOGY

B.Sc. (CS) (Third Year) (Sixth Semester) EXAMINATION

APRIL/MAY, 2023

(CBCS Pattern)

COMPUTER SCIENCE

Paper S6.CC.5

(Cyber Security)

(Saturday, 29-4-2023) **Time : 10.00 a.m. to 1.00 p.m.**

Time—Three Hours *Maximum Marks*—75

N.B. :— (*i*) Attempt *all* questions.

(*ii*) *All* questions carry equal marks.

1. Attempt the following (any *five*) : 15

(*a*) Explain the need of cyber security.

(*b*) What is Cryptography ?

(*c*) Explain the concept of Digital Signature.

(*d*) Explain the concept of Reverse Hijacking.

(*e*) What is tampering in Cyber Crime ?

(*f*) Give some example of Symmetric Cryptography.

(*g*) Explain with example the concept of Hacking.

P.T.O.

2. Attempt any *three* of the following : 15

(*a*) Describe the scope of the Act.

(*b*) Explain the concept of Meta tags.

(*c*) Explain Asymmetric Cryptography.

(*d*) Explain the concept of Framing.

(*e*) Discuss the applications of the Public Key Encryption.

3. Attempt any *three* of the following : 15

(*a*) What are the steps of RSA algorithm ? Explain.

(*b*) Discuss the technology behind Digital Signature.

(*c*) Explain the composition of Appellate Tribunal.

(*d*) Explain the steps in verifying a Digital Signature.

(*e*) Which information leads to make a Obscene for Publishing it in Electronic Form ?

4. Attempt any *three* of the following : 15

(*a*) Explain how does symmetric cryptography work ?

(*b*) Discuss the cyber crimes related with tampering with Documents.

(*c*) What is PKI in Digital Signature ? Explain.

(*d*) Discuss the laws related with digital signature.

(*e*) Discuss the powers of Adjudicating officer to impose penalty.

5. Write short notes of any *three* of the following : 15

(*a*) Hacking

(*b*) Offences : Breach of Confidentiality and Privacy

(*c*) Cyber squatting

(*d*) Components of Public Key Encryption

(*e*) Cyber Crime.

This question paper contains **3** printed pages]

GF—35—2023

FACULTY OF SCIENCE AND TECHNOLOGY

B.Sc. (CS) (Sixth Semester) EXAMINATION

APRIL/MAY, 2023

(CBCS Pattern)

COMPUTER SCIENCE

Paper AF-41

(Data Mining and Data Warehousing)

(Saturday, 29-4-2023) **Time : 10.00 a.m. to 1.00 p.m.**

Time—Three Hours *Maximum Marks*—75

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) Figures to the right indicate full marks.

(*iii*) Assume suitable data, if required.

(*iv*) Use of any electronic media such as mobile phone, digital diary and electronic calculator is not permitted.

1. Attempt any *five* of the following (**3** marks each) : 15

(*a*) Explain the concept of regression.

(*b*) Describe database/OLTP systems.

(*c*) Write a note on clustering.

P.T.O.

(*d*) Write a note on Outliers.

(*e*) What is Point Estimation ? Explain.

(*f*) Describe the concept of Association Rules.

(*g*) What is Hypothesis Testing ?

2. Attempt any *two* of the following : 10

(*a*) What is social implication of data mining ? Explain in detail.

(*b*) Explain time series analysis with example.

(*c*) Differentiate data mining *Vs.* knowledge discovery in databases.

3. Attempt any *two* of the following : 10

(*a*) Write a short note on OLAP.

(*b*) Explain KDD process in detail.

(*c*) Write a detailed note on information retrieval.

4. Attempt any *two* of the following : 10

(*a*) Explain statistical perspective on Data Mining.

(*b*) Explain Bayes' theorem.

(*c*) Explain about neural networks in detail.

5. Attempt any *two* of the following : 10

(*a*) Explain NN supervised learning in detail.

(*b*) Explain about Bayesian classification.

(*c*) Explain about Perceptron.

6. Attempt any *two* of the following : 10

(*a*) Describe in detail the concept of Divisive Clustering.

(*b*) Explain BRICH in detail.

(*c*) Explain minimum spanning tree.

7. Attempt any *two* of the following : 10

(*a*) Explain Sampling Algorithm in detail.

(*b*) What is Partitioning ? Explain.

(*c*) Explain Data Parallelism.

This question paper contains **3** printed pages]

GF—28—2023

FACULTY OF SCIENCE AND TECHNOLOGY

B.Sc. (CS) (Sixth Semester) EXAMINATION

APRIL/MAY, 2023

(CBCS Pattern)

COMPUTER SCIENCE

(Digital Image Processing)

(Thursday, 27-4-2023) **Time : 10.00 a.m. to 1.00 p.m.**

Time—Three Hours *Maximum Marks*—75

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) Figures to the right indicate full marks.

(*iii*) Assume suitable data, if required.

(*iv*) Use of any electronic media such as mobile phone, digital diary and electronic calculator is not permitted.

1. Attempt any *five* of the following (**3** marks each) : 15

(*a*) Explain advantages and disadvantages of MATLAB.

(*b*) Explain Image types.

(*c*) Explain any *two* fundamental steps in DIP.

P.T.O.

(*d*) Explain CMY color model in image processing.

(*e*) Explain imnoise( ) with example and syntax.

(*f*) Explain RGB images.

(*g*) Explain image registration.

2. Attempt any *two* of the following : 10

(*a*) Explain command window and command history window in MALAB.

(*b*) Explain multidimensional array in detail.

(*c*) Explain scalar and array operations in detail.

3. Attempt any *two* of the following : 10

(*a*) Explain reading and displaying images in MATLAB.

(*b*) Explain M-function Programming.

(*c*) Explain data classes in detail.

4. Attempt any *two* of the following : 10

(*a*) Explain any *two* linear spatial filters.

(*b*) Explain Intensity Transformation Function using log( ).

(*c*) Explain Histogram Processing and function plotting.

5. Attempt any *two* of the following : 10

(*a*) Explain computing and visualizing 2D-DFT.

(*b*) Explain Filtering in frequency domain using ideal filter.

(*c*) Explain Geometric Transformation functions.

6. Attempt any *two* of the following : 10

(*a*) Explain Restoration Techniques.

(*b*) Explain HSV images and restoration.

(*c*) Explain model of image Degradation process.

7. Attempt any *two* of the following : 10

(*a*) Explain the basics of color image representation.

(*b*) Explain non-linear spatial filtering.

(*c*) Explain elements of digital image processing system.

This question paper contains **3** printed pages]

GF—10—2023

FACULTY OF SCIENCE AND TECHNOLOGY

B.Sc. (CS) (Third Year) (Sixth Semester) EXAMINATION

APRIL/MAY, 2023

(CBCS/Revised Course)

COMPUTER SCIENCE

Paper BCS-602

(Fundamentals of Image Processing)

(Friday, 21-4-2023) **Time : 10.00 a.m. to 1.00 p.m.**

Time—Three Hours *Maximum Marks*—75

N.B. :— (*i*) *All* questions carry equal marks.

(*ii*) Assume suitable data, if necessary.

1. Attempt any *five* of the following : 15

(*a*) Explain applications of image processing.

(*b*) Explain brightness in digital image processing.

(*c*) Explain model of image degradation and restoration process.

(*d*) What is MATLAB operator ? Explain it.

(*e*) How Reading, displaying and writing of images ?

(*f*) Explain multidimensional array.

(*g*) What is Digital image processing ? Explain it.

P.T.O.

2. Attempt any *three* of the following : 15

(*a*) Explain basic intensity transformation function using imadust.

(*b*) Explain histogram and its types.

(*c*) Explain advantages and disadvantages of MATLAB.

(*d*) How to representating digital images in computer ? Explain it.

(*e*) Explain using MatLabScratch pad.

3. Attempt any *three* of the following : 15

(*a*) Explain color models and color spaces.

(*b*) Explain fundamentals of filtering.

(*c*) Explain Geometric transformation function in image restoration.

(*d*) Explain elements of Visual Perception, Brightness, Discrimination and Adaptation.

(*e*) Explain RGB color model in image processing.

4. Attempt any *three* of the following : 15

(*a*) Explain MATLAB environment in detail.

(*b*) Explain histogram equalization.

(*c*) What is data class in digital image representation ?

(*d*) Explain matrix representation in digital image representation.

(*e*) What is image and its types ?

5. Write short notes on any *three* of the following : 15

(*a*) Fundamental steps in digital image processing

(*b*) Components of image processing system

(*c*) Neighbourhood

(*d*) CMY color model

(*e*) Scratch pad.

This question paper contains **2** printed pages]

GF—19—2023

FACULTY OF SCIENCE AND TECHNOLOGY

B.Sc. (CS) (Sixth Semester) EXAMINATION

APRIL/MAY, 2023

(CBCS/Revised Pattern)

COMPUTER SCIENCE

Paper AF-21

(Linux Administration)

(Monday, 25-4-2023) **Time : 10.00 a.m. to 1.00 p.m.**

Time—Three Hours *Maximum Marks*—75

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) Figures to the right indicate full marks.

(*iii*) Assume suitable data, if required.

(*iv*) Use of any electronic media such as mobile phone, digital diary and electronic calculator is not permitted.

1. Attempt any *five* of the following (**3** marks each) : 15

(*a*) Explain Boot loader in brief.

(*b*) Explain how to change user information.

(*c*) Explain various runlevels in Linux.

(*d*) Explain chkconfig in brief.

(*e*) Explain backup commands with syntax and example.

(*f*) Explain communication commands.

(*g*) Explain NFS in brief.

P.T.O.

2. Attempt any *three* of the following (**5** marks each) : 15

(*a*) Explain features of Linux.

(*b*) Explain various text editors in Linux.

(*c*) Explain various printing commands with syntax and example.

(*d*) Explain linux file/directory structure.

(*e*) Explain how to perform system maintenance.

3. Attempt any *three* of the following (**5** marks each) : 15

(*a*) Explain how to manage users in detail.

(*b*) Explain installation steps of Linux.

(*c*) Explain concept of permissions in detail.

(*d*) Explain any *five* administrative commands with syntax and example.

(*e*) Explain network printer configuration in brief.

4. Attempt any *three* of the following (**5** marks each) : 15

(*a*) Explain concept of DHCP.

(*b*) Explain backup strategies and operations in Linux.

(*c*) Explain booting process of Linux.

(*d*) Explain logging into and working with Linux.

(*e*) Explain network configuration tools.

5. Write short notes on any *three* of the following (**5** marks each) : 15

(*a*) Disadvantages of Linux OS

(*b*) Apache web server

(*c*) DNS

(*d*) Start and stop services manually

(*e*) Backup medias.

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GF—02—2023

FACULTY OF SCIENCE AND TECHNOLOGY

B.Sc. (CS) (Sixth Semester) EXAMINATION

APRIL/MAY, 2023

(CBCS/Revised Pattern)

COMPUTER SCIENCE

Paper AF-02

(Mobile Application Development)

(Tuesday, 18-4-2023) **Time : 10.00 a.m. to 1.00 p.m.**

Time—Three Hours *Maximum Marks*—75

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) Figures to the right indicate full marks.

(*iii*) Assume suitable data, if required.

(*iv*) Use of any electronic media such as mobile phone, digital diary and electronic calculator is not permitted.

1. Attempt any *five* of the following (**3** marks each) : 15

(*a*) What is Android Operating System ? Write its features and versions.

(*b*) Write a note on Android applications structure.

(*c*) Explain Activity life cycle of Android.

(*d*) Explain Button control.

(*e*) Explain Localization in Android.

(*f*) Write a note on Shared preferences.

(*g*) Explain Toast notifications in Android.

P.T.O.

2. Attempt any *three* of the following (**5** marks each) : 15

(*a*) Explain in detail Android Development Tools.

(*b*) Write down the Android Installation Steps.

(*c*) Write a program to display "I am Android" on AVD.

(*d*) Explain Android Development Framework.

(*e*) Explain Android Stack.

3. Attempt any *three* of the following (**5** marks each) : 15

(*a*) What are fragments in android ? Explain with example.

(*b*) Explain Implicit intents and Explicit intents in detail.

(*c*) Explain Time Picker View and Date Picker View.

(*d*) Explain any *two* Text Control with example.

(*e*) Explain Web View in detail.

4. Attempt any *three* of the following (**5** marks each) : 15

(*a*) Write a simple code for Alert dialog box.

(*b*) Explain Option menu and Context menu in detail.

(*c*) Write a note on displaying Maps.

(*d*) Write a simple code for access data from SQLite database.

(*e*) Explain List View in detail.

5. Write short notes of any *three* of the following (**5** marks each) : 15

(*a*) Explain any *three* Android Versions.

(*b*) How to publish android app on Android Market ?

(*c*) What is the use of Android Manifest.xml file ?

(*d*) Explain Toggle button with its attribute.

(*e*) Explain displaying Maps.

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GF—33—2023

FACULTY OF SCIENCE AND TECHNOLOGY

B.Sc. (CS) (Third Year) (Sixth Semester) EXAMINATION

APRIL/MAY, 2023

(CBCS/Revised Pattern)

COMPUTER SCIENCE

Paper BCS-403

(Relational Database Management System)

(Friday, 28-4-2023) **Time : 2.00 p.m. to 5.00 p.m.**

Time—Three Hours *Maximum Marks*—75

N.B. :— (*i*) *All* questions carry equal marks.

(*ii*) Figures to the write indicate full marks.

(*iii*) Assume suitable data, if necessary.

1. Attempt any *five* of the following : 15

(*a*) Explain need of join in sql.

(*b*) Explain various DML commands used in SQL.

(*c*) Explain concept of relations in RDBMS.

(*d*) Explain the concept of single row conversion.

(*e*) Explain advantages and disadvantages of RDBMS.

(*f*) Explain various logical operators used in SQL.

(*g*) What is trigger ?

P.T.O.

2. Attempt any *three* of the following : 15

(*a*) Explain various users of DBMS.

(*b*) Explain BETWEEN operator in detail.

(*c*) Explain SUM( ) and COUNT( ) functions in detail.

(*d*) Explain any *two* DDL commands.

(*e*) Explain concept of foreign key in detail.

3. Attempt any *three* of the following : 15

(*a*) Explain DISTINCT clause in detail.

(*b*) Explain the concept of join with its styles.

(*c*) What is %ROWTYPE atribute ? Explain it with example.

(*d*) Explain GROUP BY clause in detail with example.

(*e*) Explain transaction control commands in detail.

4. Attempt any *three* of the following : 15

(*a*) Write SQL query to create table student with name, roll_number and Total_marks and add three records into it.

(*b*) Explain concept of exception handling in PL/SQL.

(*c*) Explain equi joins in detail.

(*d*) Explain procedure to enable and disable triggers.

(*e*) Explain concept of contrraint in detail.

5. Write short notes on any *three* of the following : 15

(*a*) ORDER BY Clause

(*b*) Exception handling in PL/SQL

(*c*) Single Row functions

(*d*) Outer join

(*e*) Entities.

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GF—03/GK—03—2023

FACULTY OF COMPUTER STUDIES

B.Sc. (Sixth Semester) EXAMINATION

APRIL/MAY, 2023

(CBCS Pattern)

COMPUTER SCIENCE

(Software Engineering)

(Tuesday, 18-4-2023) **Time : 10.00 a.m. to 1.00 p.m.**

Time—Three Hours *Maximum Marks*—75

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) Figures to the right indicate full marks.

1. Attempt any *five* of the following : 15

(*a*) Explain any software myths.

(*b*) Explain personal software process.

(*c*) Explain framework activities.

(*d*) Explain product and process.

(*e*) Define software engineering.

P.T.O.

(*f*) What is an angile process ?

(*g*) Explain essence of practice.

2. Attempt any *two* of the following : 10

(*a*) Explain waterfall model.

(*b*) Explain software characteristics.

(*c*) Explain rapid action development.

3. Attempt any *two* of the following : 10

(*a*) Explain software evolution.

(*b*) Explain spiral model.

(*c*) Explain software engineering a layered technology.

4. Attempt any *two* of the following : 10

(*a*) Explain feature driven development.

(*b*) Explain team software process (TSP).

(*c*) Explain process technology.

5. Attempt any *two* of the following : 10

(*a*) Explain planning process.

(*b*) Explain DSDM.

(*c*) Explain extreme programming.

6. Attempt any *two* of the following : 10

(*a*) Explain system modeling.

(*b*) Explain system Engineering Hierarchy.

(*c*) Explain requirement modeling.

7. Attempt any *two* of the following : 10

(*a*) Explain core principles of software engineering practices.

(*b*) Explain communication practices.

(*c*) Explain system simulation.

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GF—18—2023

FACULTY OF SCIENCE AND TECHNOLOGY

B.Sc. (CS) (Third Year) (Sixth Semester) EXAMINATION

APRIL/MAY, 2023

(CBCS/Revised Pattern)

COMPUTER SCIENCE

Paper BCS-604-A

(Software Process Management)

(Tuesday, 25-4-2023) **Time : 10.00 a.m. to 1.00 p.m.**

Time—Three Hours *Maximum Marks*—75

N.B. :— (*i*) *All* questions carry equal marks.

(*ii*) Figures to the write indicate full marks.

1. Attempt any *five* of the following : 15

(*a*) Explain the evolving role of software.

(*b*) Explain management myths.

(*c*) Distinguish between process and product.

(*d*) Describe the application of software in multimedia.

(*e*) What is software engineering ? Explain its key elements.

P.T.O.

(*f*) What is Prototyping ?

(*g*) Explain the concept of direct and indirect measurement.

2. Attempt any *three* of the following : 15

(*a*) Explain the types of process flow.

(*b*) Explain the spiral model.

(*c*) Explain function oriented metrices.

(*d*) Explain the phases of linear sequential model.

(*e*) Explain software maturity framework terminologies.

3. Attempt any *three* of the following : 15

(*a*) Explain umbrella activities in software process framework.

(*b*) How to define the framework activity ?

(*c*) Explain the phases of personal software process.

(*d*) Describe the generic development activities in software process framework.

(*e*) Explain the concept of milestone in software process framework.

4. Attempt any *three* of the following : 15

(*a*) What is process tracking and control ?

(*b*) Explain the activities to be carried out in initial phase of defining a process.

(*c*) Explain the process of defect removal.

(*d*) Describe the matrices for software quality.

(*e*) Describe the principles of software process change.

5. Write short notes on any *three* of the following : 15

(*a*) Customer and practitioners myths

(*b*) Component based development

(*c*) Software maturity

(*d*) Size oriented metrics

(*e*) Framework Activity.

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GF—34—2023

FACULTY OF SCIENCE AND TECHNOLOGY

B.Sc. (CS) (Sixth Semester) EXAMINATION

APRIL/MAY, 2023

COMPUTER SCIENCE

(Software Testing)

(Saturday, 29-4-2023) **Time : 10.00 a.m. to 1.00 p.m.**

Time—Three Hours *Maximum Marks*—75

1. Attempt any *five* : 15

   (*a*) Define the terms quality and cost of quality.

   (*b*) Define quality assurance.

   (*c*) Explain reliability of software.

   (*d*) Enlist and explain the types of security testing.

   (*e*) Enlist and explain the targeted quality form.

   (*f*) Explain the types of software review.

   (*g*) What are the phases of validation testing process ?

2. Attempt any *two* : 10

   (*a*) What are the McCall's software quality factors ?

P.T.O.

(*b*) What are ISO 9126 software quality factors ?

(*c*) Difference between Quality assurance and Quality control.

3. Attempt any *two* : 10

(*a*) Enlist and explain the activities involved in software quality assurance.

(*b*) Explain the terms :

(*i*) Mean Time to Failure

(*ii*) Mean Time to Repair

(*iii*) Mean Time between Failure.

(*c*) Define FTR with review guideline also enlist its objective.

4. Attempt any *two* : 10

(*a*) What are the strategic approaches for testing the software ?

(*b*) Explain the unit testing in detail.

(*c*) Explain validation testing in detail.

5. Attempt any *two* : 10

(*a*) Differentiate between white box and black box testing.

(*b*) Enlist and explain software testing fundamentals.

(*c*) Explain basic path testing in detail.

6. Attempt any *two* : 10

(*a*) Explain security testing.

(*b*) Explain content testing.

(*c*) What are testing concept for web apps ?

7. Attempt any *two* : 10

(*a*) Explain metrices for source code.

(*b*) What are the metrics for testing ?

(*c*) Explain matrices for requirement mode.