

(i) Printed Pages : 3

Roll No. ....

(ii) Questions : 7

Sub. Code : 

0	9	3	8
---	---	---	---

Exam. Code : 

0	0	3	0
---	---	---	---

Bachelor of Computer Applications 4<sup>th</sup> Semester  
(2054)

PUNJABI (Compulsory)

Paper-B (BCA-16-401)

Time Allowed : Three Hours]

[Maximum Marks : 45

ਨੋਟ :- (1) ਸਾਰੇ ਪ੍ਰਸ਼ਨ ਲਾਜ਼ਮੀ ਹਨ।

(2) ਲਿਖਾਈ ਸਾਫ਼ ਸੁਥਰੀ ਕਰੋ।

1. ਹੇਠ ਲਿਖੇ ਕਾਵਿ-ਟੋਟਿਆਂ ਵਿੱਚੋਂ ਕਿਸੇ ਇੱਕ ਦੀ ਪ੍ਰਸੰਗ ਸਹਿਤ ਵਿਆਖਿਆ ਕਰੋ :

ਮੇਰੇ ਤੋਂ ਆਸ ਨ ਕਰਿਓ ਕਿ ਮੈਂ ਖੇਤਾਂ ਦਾ ਖੁੱਤ ਹੋ ਕੇ

ਤੁਹਾਡੇ ਚਗਲੇ ਹੋਏ ਸਵਾਦਾਂ ਦੀ ਗੱਲ ਕਰਾਂਗਾ।

ਜਿਨ੍ਹਾਂ ਦੇ ਹੜ੍ਹ 'ਚ ਰੁੜ੍ਹ ਜਾਂਦੀ ਹੈ

ਸਾਡੇ ਬੱਚਿਆਂ ਦੀ ਤੌਤਲੀ ਕਵਿਤਾ

ਤੇ ਸਾਡੀਆਂ ਧੀਆਂ ਦਾ ਕੰਜਕ ਜਿਹਾ ਹਾਸ।

ਜਾਂ

ਤਕਦੀਰ ਤਾਂ ਆਪਣੀ ਸੌਂਕਣ ਸੀ  
ਤਦਬੀਰਾਂ ਸਾਥੋਂ ਨਾ ਹੋਈਆਂ।  
ਨਾ ਝੰਗ ਛੁਟਿਆ ਨਾ ਕੰਨ ਪਾਟੇ  
ਝੁੰਡ ਲੰਘ ਗਿਆ ਇੰਜ ਹੀਰਾਂ ਦਾ।  
ਮੇਰੇ ਗੀਤ ਵੀ ਲੋਕ ਸੁਣੀਦੇ ਨੇ  
ਨਾਲ ਕਾਫ਼ਰ ਆਖ ਸਦੀਦੇ ਨੇ।  
ਮੈਂ ਦਰਦ ਨੂੰ ਕਾਅਬਾ ਕਹਿ ਬੈਠਾ  
ਰੱਬ ਨਾਂ ਰੱਖ ਬੈਠਾ ਪੀੜਾਂ ਦਾ।

5

2. ਹੇਠ ਲਿਖੀਆਂ ਕਵਿਤਾਵਾਂ ਵਿੱਚੋਂ ਕਿਸੇ ਇੱਕ ਦਾ ਕੇਂਦਰੀ-ਭਾਵ ਜਾਂ ਸਾਰ  
ਲਿਖੋ :

(ੳ) ਲੱਛੀ ਕੁੜੀ

(ਅ) ਭੋਲਾ ਪੰਛੀ

(ੲ) ਗਜ਼ਲ (ਕੋਈ ਡਾਲੀਆਂ 'ਚੋਂ)

(ਸ) ਸੌਂਕਣ ਮੇਲੇ ਦੀ।

5

3. ਕਿਸੇ ਇੱਕ ਕਵੀ ਜਾਂ ਕਹਾਣੀਕਾਰ ਦੇ ਜੀਵਨ, ਰਚਨਾ ਤੇ ਸਾਹਿਤ ਨੂੰ ਯੋਗਦਾਨ  
ਬਾਰੇ ਲਿਖੋ :

(ੳ) ਸੁਰਜੀਤ ਪਾਤਰ

(ਅ) ਰਘੁਬੀਰ ਢੰਡ।

8

4. ਹੇਠ ਲਿਖੀਆਂ ਕਹਾਣੀਆਂ ਵਿੱਚੋਂ ਕਿਸੇ ਇੱਕ ਕਹਾਣੀ ਦਾ ਸਾਰ ਲਿਖੋ :

(ੳ) ਗਧੀ ਵਾਲਾ

(ਅ) ਜਿੱਥੋਂ ਸੂਰਜ ਉੱਗਦਾ ਹੈ।

5

5. ਤੁਹਾਡੇ ਕਾਲਜ ਵਿੱਚ ਇੱਕ ਤ੍ਰੈ-ਭਾਸ਼ੀ ਕਵੀ ਦਰਬਾਰ ਕਰਵਾਇਆ ਗਿਆ। ਉਸ ਸੰਬੰਧੀ ਪ੍ਰੈੱਸ ਨੋਟ ਤਿਆਰ ਕਰੋ।

ਜਾਂ

ਤੁਹਾਡੇ ਕਾਲਜ ਵਿੱਚ 'ਸਪੋਰਟਸ ਡੇ' ਮਨਾਇਆ ਗਿਆ। ਉਸ ਸੰਬੰਧੀ ਪ੍ਰੈੱਸ ਨੋਟ ਲਿਖੋ।

8

6. ਤੁਸੀਂ ਆਪਣੇ ਸ਼ਹਿਰ ਵਿੱਚ ਕਾਰਾਂ ਵੇਚਣ ਦਾ ਸ਼ੋਅਰੂਮ ਖੋਲ੍ਹਿਆ ਹੈ। ਉਸ ਵਿੱਚ ਸੇਲਜ ਮੈਨੇਜਰ ਦੀ ਨਿਯੁਕਤੀ ਸੰਬੰਧੀ ਅਖ਼ਬਾਰ ਵਿੱਚ ਦੇਣ ਲਈ ਇਸ਼ਤਿਹਾਰ ਲਿਖੋ।

ਜਾਂ

ਤੁਸੀਂ ਕਿਸੇ ਸ਼ਹਿਰ ਵਿੱਚ 'ਫਾਸਟ ਫੂਡ' ਦੀ ਦੁਕਾਨ ਖੋਲ੍ਹੀ ਹੈ। ਉਸ ਨਾਲ ਸੰਬੰਧਿਤ ਅਖ਼ਬਾਰ ਵਿੱਚ ਦੇਣ ਲਈ ਇਸ਼ਤਿਹਾਰ ਲਿਖੋ।

7

7. ਹੇਠ ਲਿਖੇ ਪੈਰ੍ਹੇ ਦੇ ਵਿਸ਼ਰਾਮ ਚਿੰਨ੍ਹ ਲਗਾਓ :

ਜਗਤਾਰ ਬੋਲਿਆ ਤੈਨੂੰ ਪਤੈ ਬਈ ਜਦੋਂ ਇਕ ਵਾਰ ਪੱਗ ਦਾ ਲੜ ਅੜ ਜਾਵੇ ਫਿਰ ਤਾਂ ਮੁਸ਼ਕਿਲ ਨਾਲ ਈ ਸੂਤ ਆਉਂਦੀ ਆ। ਮੈਂ ਤਾਂ ਪੂਣੀ ਵੀ ਦੁਬਾਰਾ ਕਰਵਾ ਕੇ ਹਟਿਆ ਸੁਮੀਤ ਤੋਂ।

7

(i) Printed Pages : 3 Roll No. ....

(ii) Questions : 9 Sub. Code : 

0	9	3	9
---	---	---	---

Exam. Code : 

0	0	3	0
---	---	---	---

**Bachelor of Computer Applications 4<sup>th</sup> Semester**

(2054)

**SOFTWARE PROJECT MANAGEMENT**

**Paper : BCA-16-403**

**Time Allowed : Three Hours]**

**[Maximum Marks : 65**

**Note :—** Attempt **five** questions in all, including Question No. **9** in Section-E, which is compulsory and taking **one** each from Section-A, B, C & D.

**SECTION—A**

1. What is Software Project Management ? Describe the four important phases of the Project Management Life Cycle. 13
2. Define feasibility study and discuss various steps in feasibility study of a project. Explain the aspects considered in technical and economic feasibility of a project. 13

**SECTION—B**

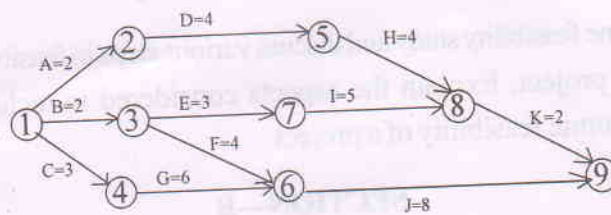
3. Explain the need of planning software projects. What are the broad activities that encompass software project planning ? 13
4. What is the importance of project integration management ? What are the important processes for project integration management ? Explain. 13

### SECTION—C

5. What is process instrumentation in Software Project Management ?  
Discuss seven core metrics for project control and process instrumentation with suitable examples. 13
6. What do you understand by Work Breakdown Structure (WBS) ?  
Give difference between conventional and evolutionary WBS.  
In what ways may WBS be used as a key document to monitor and control a software project ? Explain. 13

### SECTION—D

7. (a) What is project scheduling ? List and discuss the various project scheduling activities.
- (b) Define critical path analysis and project completion time for the following :



6,7

8. Discuss software project cost management and its importance.  
Explain the Constructive Cost Model (COCOMO) for estimating the software development cost with an example. 13

**SECTION—E (Compulsory Question)**

9. (a) Describe the principles of modern software management.
- (b) What is a checkpoint in a software project management ?  
Illustrate a typical sequence of project checkpoints for a relatively large software project.
- (c) What is project organization ? Define matrix organization.  
Discuss its merits and demerits.
- (d) What are different types of costs involved in a project ?

4,3,3,3

(i) Printed Pages: 3

Roll No. ....

(ii) Questions : 9

Sub. Code : 

0	9	4	0
---	---	---	---

Exam. Code : 

0	0	3	0
---	---	---	---

Bachelor of Computer Applications 4<sup>th</sup> Semester  
(2054)

OPERATING SYSTEM CONCEPTS AND LINUX

Paper : BCA-16-404

Time Allowed : Three Hours] [Maximum Marks : 65

Note :—Attempt FIVE questions in all, including Q. No. 9 in Section-E, which is compulsory and taking ONE each from Section-A, B, C and D.

SECTION—A

1. Define Operating System and discuss its role from different perspectives. What is distributed operating system ? What are the advantages of distributed operating system ? 13
2. For the following set of processes, develop a Gantt-chart and calculate the average waiting time using :
  - (i) FCFS
  - (ii) SJF
  - (iii) Round Robin (time quantum = 1) algorithms :

Process	Burst time	Arrival time
P <sub>1</sub>	3	0
P <sub>2</sub>	5	1
P <sub>3</sub>	2	2
P <sub>4</sub>	5	3
P <sub>5</sub>	5	4

13

0940/PC-23181

1

[Turn over

### SECTION—B

3. What is deadlock ? Explain different methods to handle deadlocks. Discuss deadlock avoidance using banker's algorithm in detail. 13

4. Consider the main memory with capacity of 3 frames. Assume that pages of a process are referenced in the order as given below :

7, 0, 1, 2, 0, 3, 0, 4, 2, 3, 0, 3.

Which one is better FIFO or LRU and why ? 13

### SECTION—C

5. (a) What are the important features of Linux that make it unique as an operating system ? Briefly trace its history.

(b) What are Linux wildcard characters and in what situations would you use these characters ? Explain with examples. 7,6

6. (a) Explain what the Linux command 'chmod' does. What single 'chmod' command can you give that will remove all write access for others (not you or those in your group) for all files in your home directory - while leaving all other permissions on the files intact ?

(b) What is the purpose of 'sort' command in Linux ? Explain the various options available with the 'sort' command with example. 7,6



### SECTION—D

7. (a) Explain the use of one of the commonly available text editors on Linux-based systems, such as the "vi" editor.
- (b) Discuss the methods and commands used to control processes on a Linux system including suspending, resuming, killing and changing the priority of running processes. 7,6
8. What is Linux system administration and what does it entail ? Explain the role and function of a system administration in Linux. Discuss the role of 'tar' facility for system administration with examples. 13

### SECTION—E

#### (Compulsory Question)

9. (a) What is meant by cooperating processes ? Describe advantages of cooperating processes.
- (b) Differentiate between paging and segmentation with examples.
- (c) What is the difference between redirection and piping ? Write a Linux command to list lines 91 through 100 in a given file.
- (d) How do you display how much disk space is used by files and how much disk space is free ? 3,3,3,4

(i) Printed Pages: 3

Roll No. ....

(ii) Questions : 9

Sub. Code : 

0	9	4	1
---	---	---	---

Exam. Code : 

0	0	3	0
---	---	---	---

**Bachelor of Computer Applications 4<sup>th</sup> Semester  
(2054)**

**DATABASE MANAGEMENT SYSTEM**

**Paper : BCA-16-405**

**Time Allowed : Three Hours] [Maximum Marks : 65**

**Note :—**Attempt FIVE questions in all, including Q. No. 9 in Section-E, which is compulsory and taking ONE each from Section-A, B, C and D.

**SECTION—A**

1. Compare DBMS and early file systems bringing out the major advantages of the database approach. With a neat block diagram, explain the architecture of a typical DBMS. 13
2. Explain the difference between weak and strong entity set with suitable examples. Construct an ER diagram for hospital management system with a set of patients and a set of doctors. Associated with each patient a log of the various tests and examinations conducted. 13

### SECTION—B

3. Consider the relation schema  $R(A, B, C, D, E, F)$  and the functional dependencies  $A \rightarrow B$ ,  $C \rightarrow DF$ ,  $AC \rightarrow E$ ,  $D \rightarrow F$ . What is the primary key of this relation  $R$ ? What is its highest normal form? Preserving the dependency, decompose  $R$  into third normal form. 13
4. Illustrate the differences between Hierarchical, Network and Relational data models with the help of suitable examples. Explain why relational data model is a better choice over the two. Justify your answer. 13

### SECTION—C

5. (a) Discuss the various DDL and DML commands with illustrations in SQL.  
(b) Explain any three aggregate functions in SQL with appropriate examples. 6,7
6. (a) What is a view? How do views support logical data independence? How are views used for security? How are queries on views evaluated?  
(b) Explain the use of GRANT and REVOKE commands to control the access of the database with examples. 6,7

### SECTION—D

7. Consider the following relational tables :

*employee* (*person-name*, *street*, *city*)

*works* (*person-name*, *company-name*, *salary*)

*company* (*company-name*, *city*)

*manages* (*person-name*, *manager-name*)

Write SQL queries for the following : (i) list the names of the employees who work for the company 'Wipro' along with the cities they live in (ii) find the names of employees who work for the company 'Infosys' with a salary more than Rs. 50,000 (iii) find the names of the employees who do not work for the company 'HCL'. 13

8. Explain the following with examples :

(a) Cursor management in PL/SQL

(b) Data types in PL/SQL. 6,7

#### SECTION—E

#### (Compulsory Question)

9. (a) Define two levels of data independence in DBMS with examples.

(b) Explain with examples, basic constraints that can be specified when a relational database table is created.

(c) Explain the use of the SQL GROUP BY clause and SQL HAVING clause with syntax and examples.

(d) What is difference between implicit and explicit SQL cursors ? 3,3,3,4