UNIVERSITY OF THE PUNJAB

B.S. in Computer Science Third Year : Annual–2022

Roll No. .....

Subject: Operating Systems | Paper: 12 | Time: 2 Hrs. 30 Min. | Marks: 80

ATTEMPT THIS (SUBJECTIVE) ON THE SEPARATE ANSWER SHEET PROVIDED

NOTE: Attempt any FOUR questions. All questions carry equal marks.

Q.2. Give short answers to the following questions: (5x4=20)

a) Briefly explain the use of base and limit register for memory protection.
b) How multi-programmed systems are used to get maximum utilization of CPU and I/O devices?
c) Briefly explain the purpose of system call with the help of appropriate examples.
d) Briefly explain Process Control Block (PCB).
e) Draw 5-state process model.

Question # 3

a) Explain the use of fork() and pipe() system calls with the help of an example. Also write the reasons of failure of these system calls. (10)
b) What is a thread? What are the advantages and disadvantages of threads? (5)
c) Briefly explain the process scheduling queues. (5)

Question # 4

Consider the following set of processes, with the length of the CPU burst given in milliseconds: (20)

Process	Arrival Time	Burst Time	Priority#
P1	0	10	3
P2	1	7	1
P3	2	6	2
P4	3	5	4
P5	4	7	2

Draw the Gantt charts illustrating the execution of these processes using the following scheduling algorithms. Also compute Average Waiting Time (AWT) of the algorithms.

i) SRTF (Shortest Remaining Time First)
ii) Non-preemptive priority scheduling (a smaller number implies higher priority)
iii) Round Robin scheduling (quantum=3)

Question # 5

a) Explain the difference between Multiprogramming with Fixed number of tasks (MFT) and Multiprogramming with Variable number of tasks (MVT). Also discuss the type of memory fragmentation that occurs in MFT and MVT. (8)

b) Consider the snapshot of a system. A = 7, B = 8, C = 12, D= 10 (12)

Process	Max A B C D	Allocation A B C D	Need A B C D	Available A B C D
P0	4 2 6 2	1 2 2 0	3042	1226
P1	2 3 8 4	2 1 2 0	0264	
P2	3 2 2 4	2 1 0 2	1122	
P3	2 4 6 4	0 2 4 2	2222	
P4	2 3 4 2	1 0 2 0	1322	

Answer the following using Banker's Agorithm:

i) What is the content of the matrix need?
ii) Is the system in a safe state? If yes, then what is the safe sequence? Show your work.
iii) Determine whether the following sequence is safe or not?

P2, P3, P4, P0, P1; P3, P4, P0, P2, P4; P2, P4, P0, P3, P1;

P.T.O.

Question # 6

a) If the hit ratio to a TLB is 90%, and it takes 10 nanoseconds to search the TLB, and 200 nanoseconds to access the main memory, then calculate effective memory access time (in nanoseconds). (4)

b) In a paging system, logical address space is 64 GB and the page size is 4 KB. Available physical memory is 32 GB. Compute the number of bits required for p, d, f and Page Table Entry Size. (4)

c) Consider a logical address of 48 bits with 512 segments per process and a page size of 4K. The available RAM is of 4GB. Find the format of logical address, format of physical address, number of pages per segment, number of pages per segment, maximum segment size and maximum process size. (6)

d) Calculate the number of page faults using optimal page replacement algorithm for the following reference string with four pages frame. (6)

1, 2, 3, 2, 4, 5, 3, 4, 6, 7, 2, 1, 8, 7, 8, 5, 4, 2, 4, 5

Question # 7

a) Define the following terms related to process synchronization: (8)

Atomic operation; Bounded waiting; Busy waiting; Race condition;

b) What is a semaphore? What's the difference between binary and counting semaphore? (6)

c) What is reader-writer problem in process synchronization. Consider the following code for solving the first Reader-Writer problem. Suppose that a writer is executing in its Critical Section and two readers arrive. Mention and justify the line of code at which the first reader and the second reader will block. (6)

```
int readCount = 0;      //used to represent the current number of readers in CS.
semaphore mutex = 1;    //used to get hold of readCount mutually exclusively
semaphore wrt = 1;      //used by writer to access the CS mutually exclusively
```

Writer

```
1. do{
2.    wait(wrt);
3.    <Writing is performed>
4.    signal(wrt);
5. }while(1);
```

Reader

```
1.   do{
2.      wait( mutex);
3.      readCount++;
4.      if(readCount == 1)
5.        wait(wrt);
6.      signal(mutex);
7.      <Reading is performed>
8.      wait(mutex);
9.      readCount--;
10.  if(readCount == 0)
11.  signal(wrt);
12.  signal(mutex);
13.  }while(1);
```

UNIVERSITY OF THE PUNJAB

B.S. in Computer Science Third Year : Annual–2022

Subject: Operating Systems Paper: 12 Time: 30 Min. Marks: 20

Roll No. in Fig. .....

Roll No. in Words. .....

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Signature of Supdt.:

This Paper will be collected back after expiry of time limit mentioned above, then Subjective paper shall be attempted.

ATTEMPT THIS PAPER ON THIS QUESTION SHEET ONLY.

Q.1. Encircle the right answer cutting and overwriting is not allowed. (20x1=20)

1. The services of Operating System kernel can be availed through_____.

   A. System Call B. Semaphore C. Thread D. Dispatcher

2. _____ ensures that no process accesses a memory address outside its address space.

   A. CPU B. Address C. Memory D. I/O

3. The removal of process from active contention of CPU and reintroduce them into memory later is known as _____.

   A. Interrupt B. Swapping C. Signal D. Thread

4. The removal of process from active contention of CPU and reintroduce them into memory later is known as _____.

   A. Swapping B. Interrupt C. Signal D. Fragmentation

5. Which one of the following is an inter-process communication tool?

   A. FIFO B. Pipe C. Socket D. All of the given

6. The interval from the time of submission of a process to the time of completion is termed as _____ time

   A. waiting B. turnaround C. response D. completion

7. A thread is a _____.

   A. lightweight process C. process scheduler
   B. critical section D. high speed process

8. _____ scheduler is invoked when a process is swapped out of main memory.

   A. Long term scheduler C. Medium term scheduler
   B. Short term scheduler D. All of the given

9. _____ scheduling algorithm is suitable for time sharing systems.

   A. FCFS B. SJF C. Priority D. Round-Robin

10. Race condition is a situation where the final value of the shared data being accessed by concurrent processes depends upon:

    A. Which process finishes first C. Which process finishes last
    B. Which process starts first D. Which process starts last

11. If semaphore is being used for process synchronization, then it must be initialized with ____.

    A. 0 B. 1 C. 2 D. Any positive integer

12. Which of the following is software-based solution for solving critical section problem?

    A. Semaphore B. SWAP C. Peterson algorithm D. Bakery algorithm

13. The circular wait condition of deadlock can be prevented by

    A. using thread C. using semaphore
    B. using pipes D. defining a linear ordering of resource types

14. In paged memory system, physical memory is broken into fixed-sized blocks called _____.

A. frames
B. blocks
C. pages
D. segments

15. In fixed sized partition, the degree of multi programming is bounded by the _____

A. Memory size
B. Number of partitions
C. CPU
D. Partition size

16. An SJF algorithm is simply a priority algorithm where the priority is:

A. The predicted next CPU burst
B. The inverse of the predicted next CPU burst
C. The current CPU burst
D. Anything the user wants

17. Compaction is a technique for overcoming _____.

A. internal fragmentation
B. fatal error
C. deadlock
D. external fragmentation

18. What is Belady's anomaly?

A. By increasing number of frames Page fault decreases
B. By increasing number of frames Page fault increases
C. By decreasing number of frames Page fault increases
D. By decreasing number of frames Page fault decreases

19. Minimum number of frames that can be allocated to a process depends on:

A. Available memory
B. Paging mechanism used
C. Secondary storage space
D. Architecture

20. A computer system has 48-bit logical address, page size of 4KB, and page table entry size of two bytes. What will be the page table size?

A. 2^{32} Bytes
B. 2^{40} Bytes
C. 2^{37} Bytes
D. 2^{48} Bytes

UNIVERSITY OF THE PUNJAB

B.S. in Computer Science / Third Year : Annual–2022

Roll No. .....

Subject: Software Engineering Paper: 13 Time: 3 Hrs. Marks: 100

NOTE: Attempt any FIVE out of seven questions. Question # 1 is compulsory to attempt. Each question carries 20 marks.

Question 1: (20 marks)

Explain the following concepts with examples (Compulsory Question)

A. **Domain Model Entity**
B. **Gray Box Testing Technique**
C. **Data Flow Diagram**
D. **Use Case Actor**

Question 2: (20 marks)

List all the stages of "Bohem's Spiral Model" explaining each stage with details. Also provide advantages and disadvantages of the model?

Question 3: (20 marks)

Define "Lines of Code" (LoC) Costing Technique from Software Project Cost Estimation? Also enlist differences between KLOC, KDLOC and Person-Month? Use suitable example to explain your answers.

Question 4: (20 marks)

Define the following Terms and give details using Examples for each concept from Four Ps of Project Planning?

1. **Project**
2. **Product**
3. **People**
4. **Process**

Question 5: (20 marks)

Define the Concept of DOMAIN MODEL, Write type of relationships in a Domain Model and use diagram to explain your answer in detail.

Question 6: (20 marks)

In FUNCTION POINT COST ESTIMATION TECHNIQUE from Software Project Costing what is meant by the following Terms, explain your answer with detail and provide suitable examples

1. **Elementary Process**
2. **Internal Logical Files**
3. **External Interface Files**
4. **User Query Count**

Question 7: (20 marks)

Define the following with detail and provide suitable examples. Also provide merits and demerits of each over others

1. **Black Box Test**
2. **White Box Text**
3. **Gray Box Test**
4. **Glass Box Test**

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B.S. in Computer Science Third Year : Annual–2022

Subject: Database Systems Paper: 14 Time: 30 Min. Marks: 10

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Signature of Supdt.:

This Paper will be collected back after expiry of time limit mentioned above, then Subjective paper shall be attempted.

ATTEMPT THIS PAPER ON THIS QUESTION SHEET ONLY.

Q.1. Encircle the right answer cutting and overwriting is not allowed. (10x1=10)

1. Data redundancy and inconistency is the challenge in which of the following system?
   a) Traditional file system
   b) DBMS
   c) RDMS
   d) None of these
2. Which of the normal form is based on multivalued dependencies?
   a) First
   b) Second
   c) Third
   d) Fourth
3. Which command is used to remove all rows from a table?
   a) Alter
   b) Remove
   c) Truncate
   d) Drop
4. A_____ is a query that retrieves rows from more than one table or view:
   a) Start
   b) End
   c) Join
   d) All of the mentioned
5. In a relational database, a referential integrity constraint can be specified with the help of-
   a) Primary key
   b) Foreign key
   c) Secondary key
   d) None of the above
6. After groups have been established, SQL applies predicates in the _____ clause, allowing aggregate functions to be used.
   a) Where
   b) Having
   c) Group by
   d) With
7. What does a foreign key combined with a primary key create?
   a) Network model between the tables that connect them
   b) Parent-Child relationship between the tables that connects them
   c) One to many relationship between the tables that connects them
   d) All of the mentioned
8. Which of the following is popular for applications such as storage of log files in a database management system since it offers the best write performance?
   a) RAID level 0
   b) RAID level 1
   c) RAID level 2
   d) RAID level 3
9. _____ defines rules regarding the values allowed in columns and is the standard mechanism for enforcing database integrity
   a) Column
   b) Constraint
   c) Index
   d) Trigger
10. What command is used to get back the privileges offered by the GRANT command?
    a) Grant
    b) Execute
    c) Run
    d) Revoke

UNIVERSITY OF THE PUNJAB

B.S. in Computer Science Third Year : Annual–2022

Roll No. .....

Subject: Database Systems | Paper: 14 | Time: 2 Hrs. 30 Min. Marks: 65

ATTEMPT THIS (SUBJECTIVE) ON THE SEPARATE ANSWER SHEET PROVIDED

NOTE: Attempt ALL questions.

[9+9=18 marks] Question 2:

Suppose a manufacturing company stores the employee details in a table named employee that has four attributes: emp_id for storing employee's id, emp_name for storing employee's name, emp_address for storing employee's address and emp_dept for storing the department details in which the employee works. At some point of time the table looks like this:

emp_id	emp_name	emp_address	emp_dept
101	Amna	Lahore	D0001
101	Amna	Lahore	D0004
123	Ali	Karachi	D00921
166	Majid	Quetta	D00251
166	Majid	Quetta	D00322

(a) [3+3+3=9 marks] Discuss the update, insertion, and deletion anomaly in the context of the above table.

(b) [3+3+3=9 marks] Convert the above table to first, second, and third normal form. Also discuss the steps along.

[9x3=27 marks] Question 3: Short questions

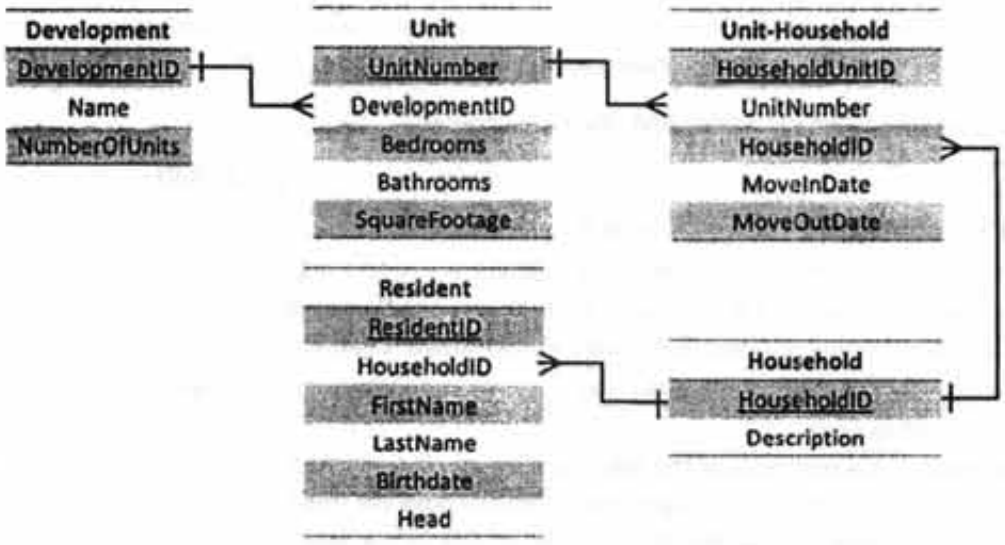
[9 marks] What is the use of DROP command and what are the differences between DROP, TRUNCATE and DELETE commands?

[9 marks] Explain the concept of ACID properties in DBMS?

[9 marks] What are the different type of relationships in the DBMS? Briefly explain each.

Question 4: (5x2=10)

Consider the following schema of Housing authority. Create a single SQL query that answers each of the following questions.



(a) Which housing units (by unit number) have more than two bathrooms?

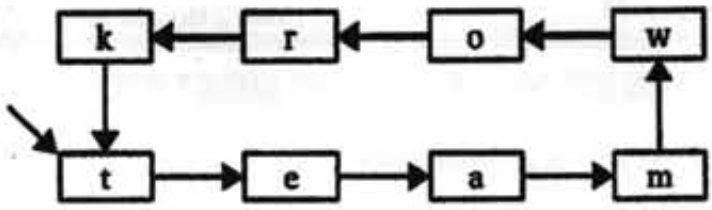
(b) What is the birthdate of resident named Tom Haverford?

(c) What are the names of all heads of household (list in ascending alphabetic order by last name?)

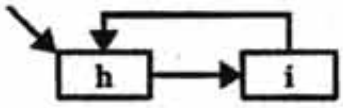
(d) How many units are larger than 2000 square feet?

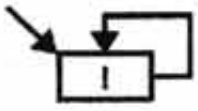
(e) What is the average squate footage of all units in the database?

You would like to produce the following circularly-linked list for the sequence ⟨t, e, a, m, w, o, r, k⟩:

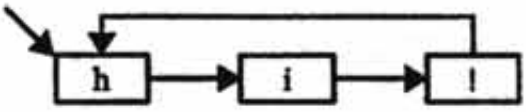


Similarly, given the following circularly-linked lists for the sequences ⟨h, i⟩ and ⟨l⟩:





You would want to produce the following circularly-linked list for the sequence ⟨h, i, l⟩:



Assuming that the nodes in the circularly-linked list are represented with the following struct:

```
struct Node {
string value;
Node* next;
};
```

Write a function Node* concatenateCircularlyLinkedLists(Node* first, Node* second); that accepts as input pointers to two different circularly-linked lists, then rewires them to form a new circularly-linked list representing the concatenation of those two lists. The function should then return a pointer to the very first cell in the resulting circularly-linked list. Your implementation of concatenateCircularlyLinkedLists must not allocate any new heap storage and must instead change the pointers in the existing cells. Since all of the collections types we have seen so far (Vector, Stack, Queue, etc.) allocate heap storage, this precludes the usage of any of those types.

In implementing this function, you can assume the following:

- Neither first nor second will be NULL.
- The pointers first and second refer to the starts of different circularly-linked lists, meaning that you will not get two pointers to the same circularly-linked lists.

```
Node* concatenateCircularlyLinkedLists(Node* first, Node* second) {
```

Question: 5 (5x2=10)

Given the following list of integers: 16, 35, 25, 7, 5, 20, 0

a. Draw the AVL tree that results when all of the above elements are added (in the given order) to an initially empty AVL tree. Please show your work. You do not have to draw an entirely new tree after each element is added, but since the final answer depends on every add being done correctly, you may wish to show the tree at various important stages to help earn partial credit in case of an error.
What is the balance factor of the root node of the AVL tree that you drew for part 3(a)?

b. Draw a valid AVL tree of integers for which a single remove would cause the tree to become imbalanced in one of the two ways an insertion cannot cause an AVL tree to become imbalanced. For full credit, draw the valid AVL tree before the remove and say which integer value would have to be removed to cause the AVL tree to become imbalanced in a way not covered by the four insertion imbalance cases.

UNIVERSITY OF THE PUNJAB

B.S. in Computer Science Third Year : Annual–2022

Subject: Analysis of Algorithms Paper: 15 Time: 30 Min. Marks: 20

Roll No. in Fig. .....

Roll No. in Words. .....

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Signature of Supdt.:

This Paper will be collected back after expiry of time limit mentioned above, then Subjective paper shall be attempted.

ATTEMPT THIS PAPER ON THIS QUESTION SHEET ONLY.

Q.1. Encircle the right answer cutting and overwriting is not allowed. (10x2=20)

1) What is recurrence for worst case of QuickSort and what is the time complexity in worst case?
   a) Recurrence is T(n) = T(n-2) + O(n) and time complexity is O(n^2)
   b) Recurrence is T(n) = T(n-1) + O(n) and time complexity is O(n^2)
   c) Recurrence is T(n) = 2T(n/2) + O(n) and time complexity is O(n Log n)
   d) Recurrence is T(n) = T(n/10)+T(9n/10) + O(n) and time complexity is O(n Log n)
2) Which of the following is not true about comparison based sorting algorithms?
   a) The minimum possible time complexity of a comparison based sorting algorithm is O(nLog n) for a random input array
   b) Any comparison based sorting algorithm can be made stable by using position as a criteria when two elements are compared
   c) Counting sort is not a comparison based sorting algorithm
   d) Heap sort is not a comparison based sorting algorithm
3) What is time complexity of fun()?

```
int fun(int n)
{
    int count=0;
    for (int i=n; i>0;i/=2)
        for (int j=0; j<i; j++)
            Count++;
    return count;
}
```

   a) O(n^2)
   b) O(n Log n)
   c) O(n)
   d) O(nLog n Log n)
4) Suppose we want to determine the efficiency of the algorithm, then how we can measure the space factor
   a) To count the maximum memory required by the algorithm
   b) To count the minimum memory required by the algorithm
   c) To count the average memory required by the algorithm
   d) To count the maximum disk space needed by the algorithm
5) A best suited linked list is
   a) For relatively permanent collections of data
   b) The structure size and data in changing constantly
   c) For both of the above
   d) For none of the above

P.T.O

6) Dijkstra's algorithm is used to solve problems?
   a) Network lock
   b) Single source shortest path
   c) All pair shortest path
   d) Sorting
7) The bellman ford algorithm returns value ?
   a) String
   b) Boolean
   c) Double
   d) Integer
8) The main measures of the efficiency of an algorithm are?
   a) Time and space complexity
   b) Data and space
   c) Professor and memory
   d) Complexity and capacity
9) Identify the best case time complexity of selection sort?
   a) (n Log n)
   b) O(n^2)
   c) O(n)
   d) O(1)
10) Identify the approach followed in Floyd Warshall's algorithm?
   a) Linear programming
   b) Dynamic programming
   c) Greedy technique
   d) Backtracking

UNIVERSITY OF THE PUNJAB

B.S. in Computer Science Third Year : Annual–2022

Roll No. .....

Subject: Analysis of Algorithms Paper: 15 Time: 2 Hrs. 30 Min. Marks: 80

ATTEMPT THIS (SUBJECTIVE) ON THE SEPARATE ANSWER SHEET PROVIDED

Q 2) Answer the following **[5+5+5 = 15]**

A) What is the difference between big-O and small-o notation?
B) What will be the height of a max heap with 800 values?
C) Write a function to find minimum of a binary search tree.

Q 3) What is the worst-case running time for the following: **[8]**

Sorting Algorithm	Worst-case running time
Quick Sort	
Insertion Sort	
Heap Sort	
Merge Sort	

Q 4) Give recurrence relations of quick sort for best case and worst case. Give examples for both cases. **(12)**

Q 5) Show step by step construction of Min Heap from the following data. **[7]**

4 1 3 2 16 9 10 14 8 7

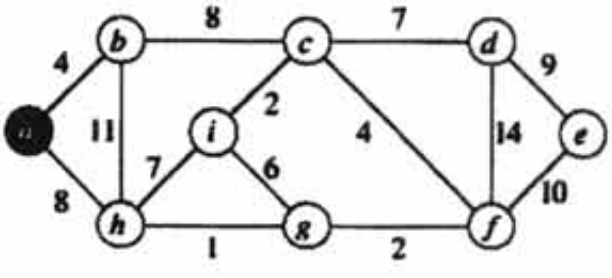
Q 6) Sort the following data using Merge Sort. Show all steps. **[8]**

23, 56, 85, 12, 0, 12, 14, 19, 17, 36, 25, 90, 66, 100, 9

Q 7-A) Show how we derive the recursion tree for $T(n) = 3T(n/4)+cn^2$. **[10]**

Q 7-B) What will be upper bound (big-O) in this case? **[5]**

Q 8-A) Consider the following graph:



Consider above graph and draw adjacency list. **[5]**

Q 8-B) Run Prim's algorithm step by step (show new graph at each stage) and find the minimum spanning tree. **[10]**

UNIVERSITY OF THE PUNJAB

B.S. in Computer Science Third Year : Annual–2022

Roll No. .....

Subject: Numerical Analysis | Paper: 16 | Time: 3 Hrs. Marks: 100

NOTE: Attempt any FIVE in all while Question # 1 is compulsory.
All questions carry equal marks.

Question 1:

i) Write down formula of cubic spline for 4 points.

ii) Write down the formula Runge Kutta method of order 2.

iii) State the difference between Roll's theorem and mean value theorem.

iv) Write down main source of errors in numerical solutions.

v) What is main difference among Spline and B-spline?

Question 2:

a) Solve the system using Gaussian elimination method

$$\begin{aligned} x+y+z &= 3 \\ 2x-y-z &= 3 \\ x+y+z &= 9 \end{aligned}$$

b) Describe dfference among relative, absolute and percentage error.

Question 3:

a) Find a root of following equation using Bisection method with $\epsilon = 0.01$.

$$f(x) = x^6 - x - 1$$

b) Describe dfference among relative, absolute and percentage error.

Question 4:

a) Consider the following function

$$f(x) = 2x^3 + x^2 - 4$$

with $h = 0.5$ and $x \in [1.5, 3.5]$ estimate $f'(2.5)$ and $f''(2.5)$

b) Calculate cubic splines fior $y(0.5)$

x	0	1	2
y	-5	-4	3

Question 5:

a) Evaluate

$$\int_0^6 \frac{1}{x+2}\,dx$$

by using simpson's $\frac{3}{8}$ rule and simpson's $\frac{1}{3}$ rule.

b) State and prove the rate of convergence of Newton Raphson method for finding roots of a non linear equation.

Question 6:

a) Given that

x	0	1	2	3	4
y	1	7	23	55	109

Find $y(0.5)$ and $y(1.5)$. Do the calculation upto two decimal places.

b) Consider the initial-value problem $y' + 2y = x^3e^{-2x}$ with $y(0) = 1$ Use Euler's method to find y at $x = 0.1$, $x = 0.2$ and $x = 0.3$. Do the calculation upto two decimal places.

Question 7:

a) Compute eigen vector using Power method starting with $x_0 = (1, 1, 1)^t$

$$A = \begin{bmatrix} 0 & 6 & 0 \\ 0 & -4 & 0 \\ 2 & 1 & 1 \end{bmatrix}$$

b) Find an LU decomposition for the matrix

$$A = \begin{bmatrix} 30 & 1 \\ 2 & 1 \end{bmatrix}$$

UNIVERSITY OF THE PUNJAB

B.S. in Computer Science Third Year : Annual–2022

Roll No. .....

Subject: Islamic Studies I & II & Pakistan Studies Paper: 17

Time: 3 Hrs. Marks: 100

USE SEPARATE ANSWER BOOK FOR EACH PART

Part-I (Islamic Studies I & II)

Max. Marks: 60

Note: *Attempt ay THREE questions. While Question No. 1 is Compulsory. All questions carry equal marks.*

نوٹ: کوئی سے تین سوال حل کریں۔ پہلا سوال لازمی ہے۔ ہر سوال کے نمبر مساوی ہیں۔

Q. 1. Answer Briefly. (20)

1) Write the point of view of the religions in Makka before the birth of the Prophet (PBUH).

2) Write the Ablution manner according to the Sunnah.

3) When Hadhrat Khadija offered Him (PBUH) her hand for marriage?

4) How did the matter of black stone resolved during the reconstruction of KA'BAH?

5) How long was the Caliphate of HAZRAT UMAR BIN KHATTAB (R.A)?

6) What is order of chivalry / Hilf al-fudul?

7) What means HAJJ literally?

8) When Imam Abu Hanifa died?

9) Who did prepare MUSHAF-E-SIDDIQI?

10) Does Islam allow a woman to be absolute mistress of her property?

سوال نمبر 1: مختصر جواب تحریر کریں:

1۔ حضور ﷺ کی ولادت سے پہلے مکہ کی مذہبی حالت کی مختصر وضاحت کریں۔

2۔ وضو کا مسنون طریقہ لکھیں۔

3۔ حضرت خدیجہؓ نے آپ ﷺ کو نکاح کی پیشکش کب کی؟

4۔ بیت اللہ کی تعمیر میں حجر اسود کی تنصیب کا معاملہ کیسے حل ہوا؟

5۔ حضرت عمر بن خطاب رضی اللہ عنہ کا زمانہ خلافت کتنا تھا؟

6۔ معاہدہ حلف الفضول کسے کہتے ہیں؟

7۔ حج کا لفظی معنی کیا ہے؟

8۔ امام ابو حنیفہؒ کی وفات کب ہوئی؟

9۔ مصحفِ صدیقی کس نے تیار کروایا؟

10۔ کیا اسلام میں عورت کو جائداد رکھنے کی مکمل آزادی ہے؟

Q. 2. Write a comprehensive historical note on the preservation of the Holy Quran. (20)

سوال نمبر 2۔ قرآن مجید کی جمع و تدوین پر جامع تاریخی جائزہ پیش کریں۔

Q. 3. Write a brief summary of political and the Caliphate system of Islam. (20)

سوال نمبر 3۔ اسلام کے سیاسی و حکمرانی نظام کا ایک جامع خلاصہ پیش کریں۔

Q. 4. Please discuss the Islamic concept of Eschatology and Predestination and Free Will in detail. (20)

سوال نمبر 4۔ اسلام کا عقیدہ جزاء و سزا اور تقدیر و عمل کی آزادی کی حدود تفصیل سے بیان کریں۔

Q. 5. Write a detailed note on the Devotional Life and Religious Practices of Islam. (20)

سوال نمبر 5۔ اسلام میں عبادات کے نظام پر تفصیلی نوٹ لکھیں۔

P.T.O.

Part-II (Pakistan Studies)

Max. Marks:40

Note: Attempt any TWO questions. All Questions carry Euaql Marks.

Q.1. Discuss the Islamic clauses of Constitution of Pakistan 1973. (20)

سوال نمبر ۱: آئین پاکستان 1973 کی اسلامی دفعات پر بحث کریں۔

Q.2. Describe the early difficulties faced by Pakistan after creation? (20)

سوال نمبر ۲: قیام پاکستان کے فوراً بعد کی ابتدائی مشکلات بیان کریں۔

Q.3. Describe the role of Sheikh Ahmad Sirhandi as pioneer of Islamic Renaissance in South Asia? (20)

سوال نمبر ۳: جنوبی ایشیاء میں اسلامی نشاۃ ثانیہ کے علمبردار کے طور پر حضرت شیخ احمد سرہندی کا کردار بیان کریں۔

Q.4. Describe Pakistan-China Relationship in detail. (20)

سوال نمبر ۴: پاکستان کے چائنہ کے ساتھ تعلقات پر تفصیلاً نوٹ لکھیں۔