भारत सरकार :: अंतरिक्ष विभाग
Government of India :: Dept. of Space
सतीश धवन अंतरिक्ष केंद्र शार, श्रीहरिकोटा
भारतीय अंतरिक्ष अनुसंधान संगठन
Indian Space Research Organisation
SATISH DHAWAN SPACE CENTRE SHAR
Sriharikota
सत्यमेव जयते
इसरो ISRO

Section : **Computer Science**

Q.1 When E-R diagram is mapped to tables, the representation is redundant for

A. Weak entity sets
B. Weak relationship sets
C. Strong entity sets
D. Strong relationship sets

Ans ✗ 1. A
✓ 2. B
✗ 3. C
✗ 4. D

Question ID : **5834935395**

Q.2 Select the correct option on Error control protocols present in Data link layer.

1. Stop and wait ARQ 2. Go back N ARQ 3. Selective repeat ARQ
4. Non - Selective repeat ARQ

A. 1,2,3
B. 1,3,4
C. 1,2,4
D. 1,4

Ans ✓ 1. A
✗ 2. B
✗ 3. C
✗ 4. D

Question ID : **5834935352**

Q.3 Which of the following is the fastest memory?

A. Cache
B. RAM
C. Register
D. Secondary storage

Ans ✗ 1. A
✗ 2. B
✓ 3. C
✗ 4. D

Question ID : **5834935380**

Q.4 A processor performing fetch or decoding of different instruction during the execution of another instruction is called _____

A. Super-scaling
B. Pipe-lining
C. Parallel computation
D. None of the above

Ans ✗ 1. A
✓ 2. B
✗ 3. C
✗ 4. D

Question ID : **5834935383**

Q.5 In Ethernet 1000BASE-X, the encoding scheme used is _____ that encodes _____ bit data into _____ bit data groups.

A. 5B/4B, 5, 4
B. 4B/5B, 4, 5
C. 8B/10B, 8, 10
D. 10B/8B, 10, 8

Ans ✗ 1. A
✗ 2. B
✓ 3. C
✗ 4. D

Question ID : **5834935351**

Q.6 Which of the following normal forms is adequate for designing relational database?

A. 2NF
B. 3NF
C. 4NF
D. BCNF

Ans ✗ 1. A
✓ 2. B
✗ 3. C
✗ 4. D

Question ID : **5834935391**

Q.7 If a process fails, most operating system writes the error into a

A. executable file
B. Log file
C. Segment table
D. Page table

Ans ✗ 1. A
✓ 2. B
✗ 3. C
✗ 4. D

Question ID : **5834935367**

Q.8 The heap is used for

A. Static memory allocation
B. To share data between controllers
C. Dynamic memory allocation
D. To store permanent data

Ans
✗ 1. A
✗ 2. B
✓ 3. C
✗ 4. D

Question ID : **5834935370**

Q.9 Consider an undirected graph G with $'n'$ vertices and $'e'$ edges. What is the time taken by Depth First Search if G is represented by

i) Adjacency Matrix
ii) Adjacency List

A. $O(n), O(n^2)$
B. $O(e), O(n^2)$
C. $O(n^2), O(e+n)$
D. $O(n+e), O(e)$

Ans
✗ 1. A
✗ 2. B
✓ 3. C
✗ 4. D

Question ID : **5834935403**

Q.10 IEEE 802.11ac is a

A. Wireless networking standard working on 2.4GHz band
B. Wireless networking standard with 8000 Mbits/s link rate
C. Wireless networking standard labelled as Wi-Fi 6
D. Wireless networking standard working on 5GHz band

Ans
✓ 1. A
✗ 2. B
✗ 3. C
✗ 4. D

Question ID : **5834935347**

Q.11 SET concept used in _____

A. Network model
B. Hierarchical model
C. Relational model
D. Object oriented model

Ans ✔ 1. A
✘ 2. B
✘ 3. C
✘ 4. D

Question ID : **5834935393**

Q.12 _____ Protocol combines some aspects of UDP and TCP

A. Service Control Transmission Protocol
B. Stream Control Transmission Protocol
C. System Control Transmission Protocol
D. Switch Control Transmission Protocol

Ans ✘ 1. A
✔ 2. B
✘ 3. C
✘ 4. D

Question ID : **5834935346**

Q.13 The purpose of rewind () function in C is _____

A. File pointer is initialized to beginning of the file
B. File is closed and freshly opened
C. File pointer is initialized to end of file
D. File pointer is set to null

Ans ✔ 1. A
✘ 2. B
✘ 3. C
✘ 4. D

Question ID : **5834935361**

Q.14 A binary search tree is generated by inserting the following integers

47, 19, 5, 68, 23, 58, 39, 4, 6, 27, 50, 14

The number of nodes in the left sub-tree and right sub-tree of the root are _____ respectively.

A. (4,7)
B. (7,4)
C. (8,3)
D. (3,8)

Ans ✘ 1. A
✘ 2. B
✔ 3. C
✘ 4. D

Question ID : **5834935400**

Q.15 Which of the following methods is executed to bring an applet to 'Running' state?

A. start()
B. stop()
C. init()
D. destroy()

Ans ✔ 1. A
✗ 2. B
✗ 3. C
✗ 4. D

Question ID : **5834935413**

Q.16 Life cycle of typical cursor involves the following 5 steps in SQL server

A. Cursor, Open, Fetch, Close and De-allocate
B. Create Cursor, Open, Fetch, Close and De-allocate
C. Declare Cursor, Create, Fetch, Close and De-allocate
D. Declare Cursor, Open, Create, Fetch and Close

Ans ✔ 1. A
✗ 2. B
✗ 3. C
✗ 4. D

Question ID : **5834935394**

Q.17 What is the minimum number of stacks of size $'n'$, required to implement a queue of size $'n'$?

A. 1
B. 2
C. 3
D. 4

Ans ✗ 1. A
✔ 2. B
✗ 3. C
✗ 4. D

Question ID : **5834935398**

Q.18 When an E-R model is converted to a relational database

A. Entity become tables and relationship becomes fields
B. Entity become fields and relationship becomes tables
C. Both entities and relationships becomes tables
D. Entity become tables and relationship becomes keys

Ans ✗ 1. A
✗ 2. B
✔ 3. C
✗ 4. D

Question ID : **5834935421**

Q.19 Which operator is used to compare a value to a list of literals value that have been specified?

A. BETWEEN
B. ANY
C. IN
D. ALL

Ans
✗ 1. A
✗ 2. B
✓ 3. C
✗ 4. D

Question ID : **5834935392**

Q.20 In order to allow only one process to enter its critical section, binary semaphore is initialised to

A. 0
B. 1
C. 2
D. 3

Ans
✗ 1. A
✓ 2. B
✗ 3. C
✗ 4. D

Question ID : **5834935368**

Q.21 Internet Control Message Protocol (ICMP) takes care of _____

A. It is used for configuring devices
B. Converts logical address to physical address for control
C. Controls all the messages in the network and filters packets
D. Reporting errors and performing network diagnostics

Ans
✗ 1. A
✗ 2. B
✗ 3. C
✓ 4. D

Question ID : **5834935350**

Q.22 If the errors are more in the Ethernet frame, bandwidth loss is minimal in

A. Go-back-N ARQ
B. Selective Repeat ARQ
C. Non-selective Repeat ARQ
D. None of the above

Ans
✗ 1. A
✓ 2. B
✗ 3. C
✗ 4. D

Question ID : **5834935348**

Q.23 The technique used in WLAN is _____

A. Time Division Multiplexing
B. Space Division Multiplexing
C. Orthogonal Frequency Division Multiplexing
D. Channel Division Multiplexing

Ans
✗ 1. A
✗ 2. B
✓ 3. C
✗ 4. D

Question ID : **5834935345**

Q.24 What is the wait time of process P2 using shortest job first scheduling?

Process	Burst time
P1	6
P2	8
P3	7
P4	3

A. 9
B. 3
C. 7
D. 16

Ans
✗ 1. A
✗ 2. B
✗ 3. C
✓ 4. D

Question ID : **5834935373**

Q.25 Consider a multiprogrammed system with a degree of 6(i.e. Six programs in memory at the same time). Assume that each process spends 40% of its time waiting for I/O. What will be the CPU utilization?

A. 004096
B. 0.999555
C. 0.995904
D. 0.994646

Ans
✗ 1. A
✗ 2. B
✓ 3. C
✗ 4. D

Question ID : **5834935375**

Q.26 What is the maximum number of comparisons required to search an element in unsorted list of $'n'$ elements using binary search?

A. $log_2 n$
B. $log_2 n^2$
C. $log_2 2^n$
D. cannot be determined

Ans
✗ 1. A
✗ 2. B
✗ 3. C
✓ 4. D

Question ID : **5834935401**

Q.27 Tables in second normal form (2NF):

A. Eliminate all hidden dependencies
B. Eliminate the possibility of an insertion anomalies
C. Have a composite key
D. Have all non-key fields depend on the whole primary key

Ans
✓ 1. A
✗ 2. B
✗ 3. C
✗ 4. D

Question ID : **5834935390**

Q.28 Choose the incorrect statement regarding TCP and UDP.

A. TCP supports broadcasting but not UDP
B. TCP guarantees delivery of data but not UDP
C. TCP is slower than UDP
D. Retransmission of data is possible in TCP but not in UDP

Ans
✓ 1. A
✗ 2. B
✗ 3. C
✗ 4. D

Question ID : **5834935349**

Q.29 The number of processes completed per unit time is called

A. Output
B. Capacity
C. Throughput
D. Efficiency

Ans
✗ 1. A
✗ 2. B
✓ 3. C
✗ 4. D

Question ID : **5834935365**

Q.30 If an entity appears in not more than 5 relationships then it is a

A. 1:1 relationship
B. 1:5 relationship
C. 5:1 relationship
D. 5:5 relationship

Ans
✗ 1. A
✓ 2. B
✗ 3. C
✗ 4. D

Question ID : **5834935389**

Q.31 Which of the following Xpath expression selects the attribute?

A. @
B. &
C. %
D. $

Ans
✓ 1. A
✗ 2. B
✗ 3. C
✗ 4. D

Question ID : **5834935418**

Q.32 Which of the following values has to be assigned to the <target> tag in the <base> tag to open the link page in a new window?

A. _blank
B. _new
C. _parent
D. _top

Ans
✓ 1. A
✗ 2. B
✗ 3. C
✗ 4. D

Question ID : **5834935420**

Q.33 What is the final value of b in the given C code fragment?

```
int a = 5;
int b = 10;
if (a + 5 – b) b++;
else --b;
```

A. 10
B. 9
C. 11
D. 8

Ans ✗ 1. A
✓ 2. B
✗ 3. C
✗ 4. D

Question ID : **5834935362**

Q.34 Key to represent the relationship between tables is called_____

A. Primary key
B. Secondary key
C. Foreign key
D. None of the above

Ans ✗ 1. A
✗ 2. B
✓ 3. C
✗ 4. D

Question ID : **5834935388**

Q.35 The number threads in thread pool depends on

A. No. of processes
B. No. of threads
C. No. of processes and threads communicate each other
D. No. of the exited threads

Ans ✗ 1. A
✓ 2. B
✗ 3. C
✗ 4. D

Question ID : **5834935366**

Q.36 In ASP, which of the following method is used to end the current user session and destroy the current session object?

A. Session.Exit
B. Session.End
C. Session.Terminate
D. Session.Abandon

Ans
✗ 1. A
✗ 2. B
✗ 3. C
✓ 4. D

Question ID : **5834935417**

Q.37 The main container for the HTML tags <tr>, <td>, and <th> is _____.

A. <body>
B. <group>
C. <data>
D. <table>

Ans
✗ 1. A
✗ 2. B
✗ 3. C
✓ 4. D

Question ID : **5834935415**

Q.38 Increasing the RAM of the PC improves performance because

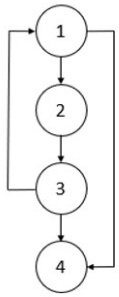
A. Large RAMs are fast
B. Fewer page faults
C. Virtual memory increases
D. Fewer memory access

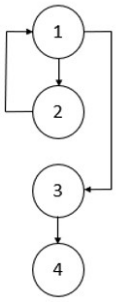
Ans
✗ 1. A
✓ 2. B
✗ 3. C
✗ 4. D

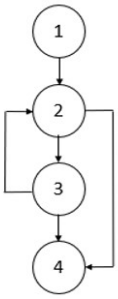
Question ID : **5834935371**

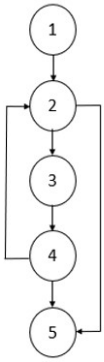
Q.39 What is the control flow graph for the following code fragment?

```
while (a > b)
{
        b = b – 1;
        b = b * a;
}
c = a + b
```

A. 

B. 

C. 

D. 

Ans
✔ 1. A
✘ 2. B
✘ 3. C
✘ 4. D

Question ID : **5834935410**

Q.40 Which of the following is NOT a type of integration strategy?

A. Top down integration
B. Sandwich integration
C. Component integration
D. Bottom up integration

Ans
✘ 1. A
✘ 2. B
✔ 3. C
✘ 4. D

Question ID : **5834935408**

Q.41 Abbreviate SQL _____

A. Systematic Query Language
B. Structured Query Language
C. Structural Query Language
D. Simple Query Language

Ans
✘ 1. A
✔ 2. B
✘ 3. C
✘ 4. D

Question ID : **5834935387**

Q.42 The most desirable and least desirable form of cohesion are _____ respectively.

A. functional cohesion, coincidental cohesion
B. logical cohesion, sequential cohesion
C. procedural cohesion, functional cohesion
D. temporal cohesion, logical cohesion

Ans ✔ 1. A
✘ 2. B
✘ 3. C
✘ 4. D

Question ID : **5834935407**

Q.43 The process of organizing the memory into two banks to allow 8 bit and 16-bit data operation is called

A. Bank switching
B. Indexed mapping
C. Two-way memory interleaving
D. Memory segmentation

Ans ✘ 1. A
✘ 2. B
✔ 3. C
✘ 4. D

Question ID : **5834935386**

Q.44 Choose the option with correct order of operator precedence from highest to lowest.

A. &, >, +, /
B. /, &, >, +
C. /, +, >, &
D. /, +, &, >

Ans ✘ 1. A
✘ 2. B
✔ 3. C
✘ 4. D

Question ID : **5834935363**

Q.45 The overhead code required to be written for unit testing is called

I. driver II. stub III. scaffolding

A. Only I
B. Only II
C. Only III
D. Only I and II

Ans ✘ 1. A
✘ 2. B
✔ 3. C
✘ 4. D

Question ID : **5834935412**

Q.46 Construction of a coaxial cable can be briefly given as

A. A solid inner conductor surrounded by an insulator
B. A solid inner conductor surrounded by an insulator and an overall conductive sheath
C. A solid inner conductor surrounded by a conductive sheath
D. A solid inner conductor twisted with an insulation

Ans ✗ 1. A
✓ 2. B
✗ 3. C
✗ 4. D

Question ID : **5834935344**

Q.47 Token ring is standardized in 1989 as IEEE _____

A. 802.3
B. 802.4
C. 802.5
D. 802.11ac

Ans ✗ 1. A
✗ 2. B
✓ 3. C
✗ 4. D

Question ID : **5834935343**

Q.48 The range of numbers which can be represented by 9 bits when 2's compliment integer representation is used

A. -256 to + 255
B. -255 to + 256
C. -512 to + 511
D. 0 to 1024

Ans ✓ 1. A
✗ 2. B
✗ 3. C
✗ 4. D

Question ID : **5834935384**

Q.49 The technique where the controller is given complete access to main memory is ____

A. Cycle stealing
B. Memory stealing
C. Memory conditioning
D. Burst mode

Ans ✗ 1. A
✗ 2. B
✗ 3. C
✓ 4. D

Question ID : **5834935382**

Q.50 What is the maximum size of the disk for the following details?

No. of cyclinders:1024

No. of heads:16(Two tracks per head)

Sectors per track:63

Each sector:512 bytes

A. 128MB

B. 528MB

C. 1056MB

D. 428MB

Ans
✗ 1. A
✗ 2. B
✓ 3. C
✗ 4. D

Question ID : **5834935372**

Q.51 Which of the following is a phase of a compilation process?

A. Lexical analysis

B. Code generation

C. Static analysis

D. Both A & B

Ans
✗ 1. A
✗ 2. B
✗ 3. C
✓ 4. D

Question ID : **5834935369**

Q.52 Which of the following is called a self-referential structure?

A. Linked list

B. Stack

C. Queue

D. Graph

Ans
✓ 1. A
✗ 2. B
✗ 3. C
✗ 4. D

Question ID : **5834935396**

Q.53 What is the output of the C code fragment shown below?

```
#define n 6–4
void main () {
int i;
i = n * n;
printf ("%d", i);
```

A. 4
B. -22
C. 8
D. File pointer is set to null

Ans ✗ 1. A
✓ 2. B
✗ 3. C
✗ 4. D

Question ID : **5834935360**

Q.54 What is the output of the following JavaScript code?

```
<html>
    <body>
        <script>
            var x = 12.89;
            var y = 3;
            var z = '4' + y + x;
            document.write(z + "<br>");
        </script>
    </body>
</html>
```

A. 19.89
B. 712.89
C. 4312.89
D. 415.89

Ans ✗ 1. A
✗ 2. B
✓ 3. C
✗ 4. D

Question ID : **5834935419**

Q.55 fgets and gets functions are declared in the C header file _____.h

A. stdio
B. string
C. stdlib
D. conio

Ans ✓ 1. A
✗ 2. B
✗ 3. C
✗ 4. D

Question ID : **5834935356**

Q.56 If the requirements are frequently changing in a software project, which model among the following is best suited to adopt for the project?

A. Waterfall model
B. RAD model
C. Iterative enhancement model
D. Prototyping model

Ans
✗ 1. A
✗ 2. B
✗ 3. C
✓ 4. D

Question ID : **5834935406**

Q.57 Which of the interrupts are non-maskable?

A. RST 7.5
B. TRAP
C. RST 5.5
D. INTR

Ans
✗ 1. A
✓ 2. B
✗ 3. C
✗ 4. D

Question ID : **5834935378**

Q.58 Which of the following is not a non-functional requirement?

A. efficiency
B. product feature
C. reliability
D. stability

Ans
✗ 1. A
✓ 2. B
✗ 3. C
✗ 4. D

Question ID : **5834935404**

Q.59 An undirected graph G with $'n'$ vertices and $'e'$ edges is represented by an Adjacency list. What is the time required to determine the total number of edges in the graph G?

A. O (e)
B. O (e^2)
C. O (n)
D. O ($n + e$)

Ans
✗ 1. A
✗ 2. B
✗ 3. C
✓ 4. D

Question ID : **5834935399**

Q.60 Which of the following is logical or relational operator?

A. +
B. -
C. !
D. %

Ans ✗ 1. A
✗ 2. B
✓ 3. C
✗ 4. D

Question ID : **5834935355**

Q.61 The number of successful access to memory stated as a fraction is called as _____

A. Access rate
B. Success rate
C. Miss rate
D. Hit rate

Ans ✗ 1. A
✗ 2. B
✗ 3. C
✓ 4. D

Question ID : **5834935377**

Q.62 Select the correct option regarding functions of ARP.

A. ARP is responsible for CRC checks in the network device to ensure error free package
B. ARP is responsible for matching the IP address to the MAC address of network device.
C. ARP is responsible for applying sequence numbers to the sent package
D. ARP is responsible for matching the Client address to the IP address of client

Ans ✗ 1. A
✓ 2. B
✗ 3. C
✗ 4. D

Question ID : **5834935353**

Q.63 Which of the following is used for static allocation of memory in C?

A. malloc
B. realloc
C. calloc
D. None of the above

Ans ✗ 1. A
✗ 2. B
✗ 3. C
✓ 4. D

Question ID : **5834935359**

Q.64 The worst-case time required to search a given element in a sorted singly linked list of length $'n'$ is _____.

A. O (1)
B. O $(log_2 n)$
C. O (n)
D. O $(n\ log_2 n)$

Ans ✗ 1. A
✗ 2. B
✓ 3. C
✗ 4. D

Question ID : **5834935397**

Q.65 Which of the following C statements is valid?

A. if (return (1)) {};
B. if (switch(1)) {};
C. if (if(1)) {};
D. if (2>3?0:1) {};

Ans ✗ 1. A
✗ 2. B
✗ 3. C
✓ 4. D

Question ID : **5834935364**

Q.66 If an error happens every two days, what is the probability that the system will not fail for four days?

A. 0.0625
B. 0.375
C. 0.25
D. 0.5

Ans ✓ 1. A
✗ 2. B
✗ 3. C
✗ 4. D

Question ID : **5834935411**

Q.67 The concept of performing a sequence of steps /operations executed to completion as single step is called

A. Single step
B. Monotonicity
C. Atomicity
D. Periodicity

Ans
✗ 1. A
✗ 2. B
✓ 3. C
✗ 4. D

Question ID : **5834935374**

Q.68 Which of the following are specified by the URL?

I. protocol used II. domain name of the server
III. name of the ISP IV. name of the html document

A. Only II, III and IV
B. Only I, II and IV
C. Only I and III
D. I, II, III and IV

Ans
✗ 1. A
✓ 2. B
✗ 3. C
✗ 4. D

Question ID : **5834935414**

Q.69 Telnet uses the default port of _____

A. 23
B. 20
C. 21
D. 25

Ans
✓ 1. A
✗ 2. B
✗ 3. C
✗ 4. D

Question ID : **5834935342**

Q.70 The instruction fetch phase ends with_____

A. Placing the data from the address in MAR into MDR

B. Placing the address of the data into MAR

C. Completing the execution of the data and placing its storage address into MAR

D. Decoding the data in MDR and placing it in IR

Ans
✗ 1. A
✗ 2. B
✗ 3. C
✓ 4. D

Question ID : **5834935385**

Q.71 The numbers 1, 2, …… n are inserted in a binary search tree in the same order. If its right sub-tree has $'p'$ nodes then the first number to be inserted in the tree must be

A. $p - n$

B. $n - p + 1$

C. $n + p$

D. $n - p$

Ans
✗ 1. A
✗ 2. B
✗ 3. C
✓ 4. D

Question ID : **5834935402**

Q.72 The instructions like MOV or ADD are called as _____

A. Op-code

B. Operators

C. Operand

D. None of the above

Ans
✓ 1. A
✗ 2. B
✗ 3. C
✗ 4. D

Question ID : **5834935379**

Q.73 Which of the following is not required for an XML document to be well-formed?

A. All XML documents have to be validated against a DTD

B. All XML tags are case-sensitive

C. All XML elements must be properly nested

D. All XML elements must have a closing tag

Ans
✓ 1. A
✗ 2. B
✗ 3. C
✗ 4. D

Question ID : **5834935416**

Q.74 Output of the given C code fragment is _____

```
int n = 3;
switch (n+1) {
        case 3: printf ("%d", n+1);
                break;
        case 4: printf (%d", n-1);
                break; }
```

A. 2
B. 3
C. 4
D. 5

Ans ✔ 1. A
✘ 2. B
✘ 3. C
✘ 4. D

Question ID : **5834935357**

Q.75 Zero address instruction format is used for _____

A. Von-Neumann architecture
B. CISC architecture
C. Stack-organized architecture
D. None of the above

Ans ✘ 1. A
✘ 2. B
✔ 3. C
✘ 4. D

Question ID : **5834935381**

Q.76 Software compatibility means which of the following?

A. being able to use existing programs with the new programs
B. being able to connect hardware together
C. being able to transfer data between old and new hardware
D. being able to work on network.

Ans ✔ 1. A
✘ 2. B
✘ 3. C
✘ 4. D

Question ID : **5834935405**

Q.77 Which of the following are tools in design phase?

I. Information hiding II. Refinement III. Abstraction

A. I and II

B. I and III

C. II and III

D. I, II and III

Ans ✗ 1. A

✗ 2. B

✗ 3. C

✓ 4. D

Question ID : **5834935409**

Q.78 Why is type conversion needed?

A. Fun

B. To match with source data type

C. To mismatch the data types for efficient memory handling

D. To match with destination data type

Ans ✗ 1. A

✗ 2. B

✗ 3. C

✓ 4. D

Question ID : **5834935354**

Q.79 The mantissa in a floating-point number is always_____

A. Greater than 1

B. Less than 1

C. Equal to 1

D. Equal to 0

Ans ✗ 1. A

✗ 2. B

✓ 3. C

✗ 4. D

Question ID : **5834935376**

Q.80 In the given C code fragment, fill **xxxx** with an appropriate C keyword/function to find the end of file.

```
FILE *infile = fopen(fn, "r");
len = ftell(infile);
if (!xxxx) printf ("End of file is not reached");
```

A. fseek(infile)
B. eof(infile)
C. feof(infile)
D. EOF

Ans
✗ 1. A
✗ 2. B
✓ 3. C
✗ 4. D

Question ID : **5834935358**