

Sardar Patel University of Police, Security and Criminal Justice, Jodhpur(Raj)

Entrance Test 2014

Paper Code : 03 Master of Science in Cyber Security

Signature and Name of Invigilator	(To be filled by candidate) OMR Sheet NO.....
Signature	Roll No (In Figures)
Name	Roll No (In Words)
Time:1 Hour	Maximum Marks: 50
Number of pages in this Booklet: 14	Number of Question In this Booklet:50

1. Write your roll number in the space provided on the top of this page.
2. This paper consists of Fifty (50) multiple-choice type of questions,
3. At the commencement of examination, the question booklet will be given to you. In the first 5 minutes, you are requested to open the booklet and compulsorily examine it as below :
 - i) Tally the number of pages and number of questions in the Booklet with the information printed on the cover page
 - ii) After this verification is over, the OMR Sheet Number should be entered on this Test Booklet Code.
4. Each item has four alternative responses marked (i), (ii), (iii) and (iv). You have to darken the circle as indicated below on the correct response against each item.
Example : i ii iii iv
where (iii) is the correct response.
5. Your responses to the items are to be indicated in the **OMR Sheet**.
6. Rough Work is to be done in the end of this booklet.
7. If you write your Name, Roll Number, Phone Number or put any mark on any part of the OMR Sheet, except for the space allotted for the relevant entries, which may disclose your identity, or use abusive language or employ any other unfair means such as change of response by scratching or using white fluid, you will render yourself liable to disqualification
8. You have to return the original OMR Sheet along with question paper to the invigilators at the end of the examination compulsorily and must not carry it with you outside the Examination Hall. You are however, allowed to carry duplicate copy of OMR Sheet on conclusion of examination.
9. Use only **Blue/Black Ball point pen**.
10. Use of any calculator or log table etc., is prohibited.
11. There will be negative marking for every wrong answer, ¼ mark will be deducted.

SEAL η β ξ
SEAL
SEAL
SEAL
SEAL
CONFIDENTIAL
SLA 17 27

1. In a binary max heap containing n numbers, the smallest element can be found
 - (i) $O(n)$
 - (ii) $O(\log n)$
 - (iii) $O(\log \log n)$
 - (iv) $O(1)$

2. To implement Dijkstra's shortest path algorithm on unweighted graphs so that it runs in linear time, the data structure to be used is:
 - (i) *Queue*
 - (ii) *Stack*
 - (iii) *Heap*
 - (iv) *B-Tree*

3. Which one of the following in-place sorting algorithms needs the minimum number of swaps?
 - (i) *Quick Sort*
 - (ii) *Insertion Sort*
 - (iii) *Selection Sort*
 - (iv) *Heap Sort*

4. Two computers C1 and C2 are configured as follows:
 C1 has IP address 203.197.2.53 and netmask 255.255.128.0.
 C2 has IP address 203.197.75.201 and netmask 255.255.192.0.

Which one of the following statements is true?

- (i) C1 and C2 both assume they are on the same network
 - (ii) C2 assumes C1 is on same network, but C1 assumes C2 is on a different network
 - (iii) C1 assumes C2 is on same network, but C2 assumes C1 is on a different network
 - (iv) C1 and C2 both assume they are on different networks.
-
5. A layer-4 firewall (a device that can look at all protocol headers up to the transport layer) CANNOT
 - (i) block entire HTTP traffic during 9:00PM and 5:00AM
 - (ii) block all ICMP traffic
 - (iii) stop incoming traffic from a specific IP address but allow outgoing traffic to the same IP address
 - (iv) block TCP traffic from a specific user on a multi-user system during 9:00PM and 5:00AM

 6. Consider different activities related to email.
 - m1: Send an email from a mail client to a mail server
 - m2: Download an email from mailbox server to a mail client
 - m3: Checking email in a web browser

Which is the application level protocol used in each activity?

- (i) m1:HTTP m2:SMTP m3:POP
- (ii) m1:SMTP m2:FTP m3:HTTP
- (iii) m1: SMTP m2: POP m3: HTTP
- (iv) m1: POP m2: SMTP m3:IMAP

7. A company needs to develop digital signal processing software for one of its newest inventions. The software is expected to have 40000 lines of code. The company needs to determine the effort in person-months needed to develop this software using the basic COCOMO model. The multiplicative factor for this model is given as 2.8 for the software development on embedded systems, while the exponentiation factor is given as 1.20. What is the estimated effort in personmonths?

- (i) 234.25
- (ii) 932.5
- (iii) 287.8
- (iv) 122.4

8. Which of the following is NOT desired in a good Software Requirement Specifications (SRS) document?

- (i) Functional Requirement
- (ii) Non-Functional Requirement
- (iii) Goals of Implementation
- (iv) Algorithms for Software Implementation

9. Let the time taken to switch between user and kernel modes of execution be t_1 while the time taken to switch between two processes be t_2 . Which of the following is TRUE?

- (i) $t_1 > t_2$
- (ii) $t_1 = t_2$
- (iii) $t_1 < t_2$
- (iv) Nothing can be said about the relation between t_1 and t_2

10. HTML (Hyper Text Markup Language) has language elements which permit certain actions other than describing the structure of the web document. Which one of the following actions is NOT supported by pure HTML (without any server or client side scripting) pages?

- (i) Embed web objects from different sites into the same page
- (ii) Refresh the page automatically after a specified interval
- (iii) Automatically redirect to another page upon download
- (iv) Display the client time as part of the page

11. Which of the following transport layer protocols is used to support electronic mail?

- (i) SMTP
- (ii) IP