

**UNIVERSITY COLLEGE TATI (UC TATI)****FINAL EXAMINATION QUESTION BOOKLET**

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| COURSE CODE | : BNS 3103 |
| COURSE | : NETWORK PROGRAMMING |
| SEMESTER/SESSION | : 1-2022/2023 |
| DURATION | : 3 HOURS |

Instructions:

1. This booklet contains 5 questions. Answer ALL questions.
3. All answers should be written in answer booklet.
4. Write legibly and draw sketches wherever required.
5. If in doubt, raise your hands and ask the invigilator.

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO

THIS BOOKLET CONTAINS 5 PRINTED PAGES INCLUDING COVER PAGE

QUESTION 1

- a) Describe relationship Internet in network. (2 marks)
- b) Explain about Transmission Control Protocol/Internet Protocol (TCP/IP) layers. (8 marks)
- c) List **TWO (2)** types of Uniform Resource Identifier (URI). (2 marks)
- d) Interpret data transmission occurred in TCP/IP layers related to low level networking interface. (4 marks)

QUESTION 2

- a) Differentiate **THREE (3)** features on private and public address in IPv4 address. (6 marks)
- b) State **TWO (2)** examples of IANA IPv4 Special-Purpose Address Registry (4 marks)
- c) Describe socket module syntax (6 marks)
`socket.socket(socket_family, socket_type, protocol=0)`
 - i. Socket family
 - ii. Socket type
 - iii. Protocol
- d) Describe execution of thread application. (3 marks)
- e) State thread application in current network computing. (2 marks)

QUESTION 3

- a) State **TWO (2)** types of communication in Transport Layer protocols. (2 marks)
- b) Define socket in network programming and provide example of socket module. (3 marks)
- c) Describe Client/Server infrastructure in network and provide an example application. (3 marks)
- d) State port range for: (3 marks)
 - i. Well-known ports
 - ii. Registered ports
 - iii. Dynamics ports
- e) Interpret the following sockets call for TCP communications in Figure 2. (10 marks)

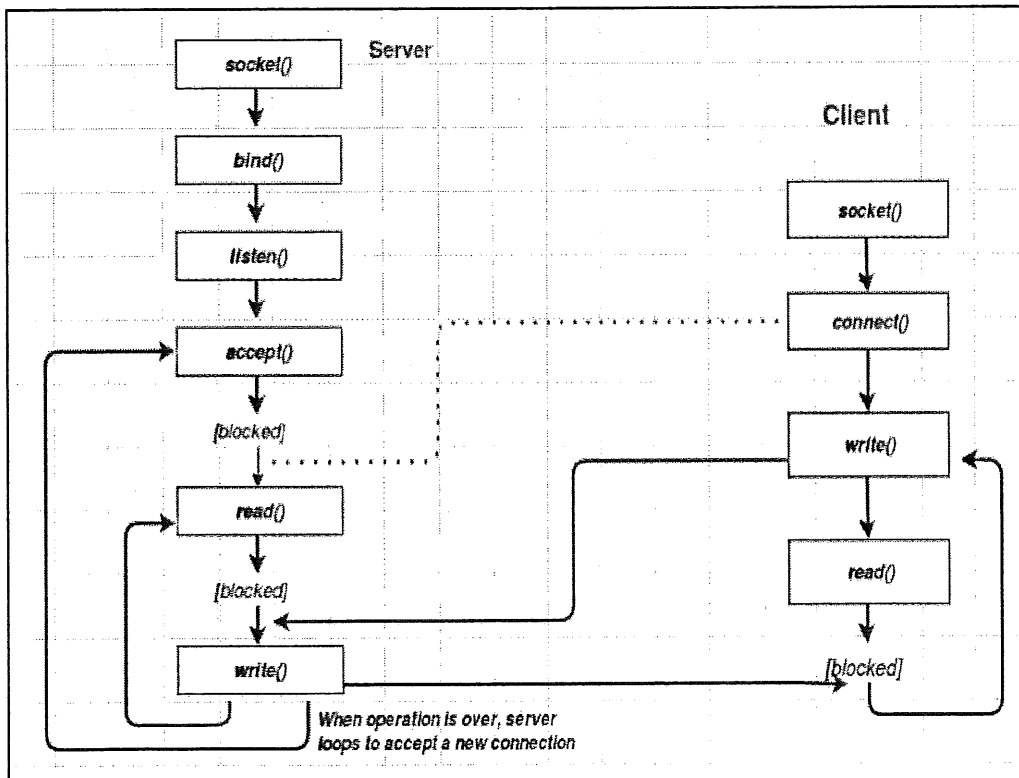


Figure 2

QUESTION 4

- a) State **THREE (3)** characteristics for datagram protocol. (6 marks)

- b) Define significant features of UDP socket transmission compared to TCP socket transmission in client server network environment. (5 marks)

- d) Interpret the following sockets call for UDP communications in Figure 3. (10 marks)

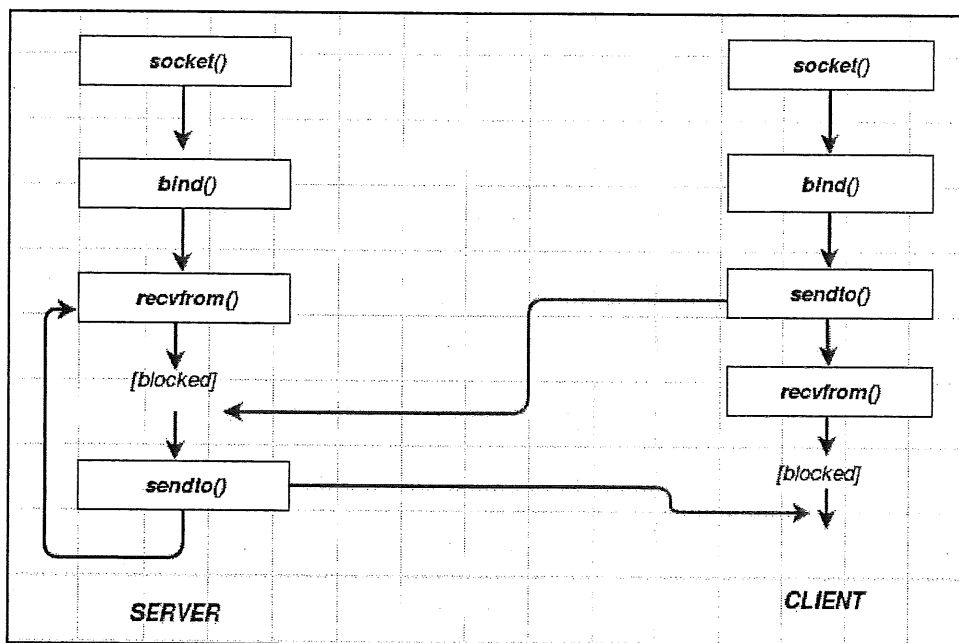


Figure 3

QUESTION 5

- a) Define Secure Socket Layer (SSL) and provide an example application. (3 marks)
- b) Describe **THREE (3)** important security factors in SSL. (6 marks)
- c) State **TWO (2)** types of cryptography applied in SSL. (2 marks)
- d) Illustrate Hypertext Transfer Protocol Secure establishment between browser and web server. (10 marks)

-----End of question-----

