SYCS
ATKT
Examination
Sem IV
October - 2024

ATKT 5YCS
4/10/24

D. B. J. College, Chiplun
Sem-IV ATKT Exam. Oct.-24
Class:- 5YCS Subject:- Computer Networks Paper No: II
Time:- 2:00 PM to 4:30 PM
Date:- 4/10/2024

Time: 2 Hr. 30 Minutes Max. Marks: 75

Notes
1) All questions are compulsory.
2) Figures to right indicate full marks.
3) Assume necessary data as required.

Que 1 **Attempt any Four of the following.** 20

A Explain FM in detail.
B What are the different types of networks? Explain in detail.
C Describe the OSI reference model with neat diagram.
D Describe the Shielded twisted pair (STP) with neat diagram.
E Write short note on circuit switching.
F Describe a ASK.

Que 2 **Attempt any Four of the following.** 20

A Write a note on FDMA.
B Explain the protocols in Data link layer.
C Write a note on HDLC.
D What is an error? Explain the types of errors?
E Elaborate the concept of ALOHA.
F Write a note on Ethernet Protocol.

Que 3 **Attempt any Four of the following.** 20

A Write a note on Client Server programming.
B Write a note on IPV6 Protocol.
C Describe the HTTP methods.
D Elaborate the concept of FTP.
E How flow control to improve QoS? Explain.
F Write a note on Telnet.

Que 4 **Attempt any Five of the following.** 15

A Enlist SCTP chunks.
B In STS-1 signal send 8000 frames per second. Find the data rate of STS signal.
C Write a note on SONET.
D What is Piggybacking? Explain.
E A noiseless Channel with a bandwidth of 4000Hz transmitting a signal with a two signal levels. Find the maximum bit rate of channel.
F Enlist SONET/DSH Rates.

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ATKT – SY CS
5/10/24

D.B.J. College, Chiplun
Sem-IV ATKT Exam. oct.-2024
Class:- S.Y.C.S. Subject:- Software Engineering
Date:- 5/10/2024 Paper No:- III
Time:- 2:00PM to 4:30PM

Time: $2^{1/2}$ Hours Total Marks: 75

Notes:

1. Figures to right indicate full marks.
2. All questions are compulsory. Use internal options to the questions.
3. Illustrations, in-depth answers and diagrams will be appreciated.
4. Mixing of sub-questions is not allowed.

Q. 1 Attempt any four of the following. (20M)

a) Comment on Concurrent development model in detail.
b) Explain generic process framework for software engineering.
c) What is agility? Explain Agile Modeling Principles.
d) Define software. Explain software has characteristics that are considerable different than those of hardware.
e) State and explain the XP Core values.
f) Write a note on UP phases.

Q. 2 Attempt any four of the following. (20M)

a) Differentiate between project and process metric in software engineering.
b) Why decomposition technique used in software scheduling? Explain different approaches used in software sizing.
c) Compare and contrast relationship between people and effort in software scheduling.
d) Explain software project estimation in detail.
e) Elaborate on Object oriented Metrics.
f) Write a short note on cohesion and coupling.

Q. 3 Attempt any four of the following. (20M)

a) Write a short note on integration testing.
b) Explain in brief
   i) Validation
   ii) Verification
c) Explain the concept of risk identification.
d) Differentiate between white box testing and black box testing.
e) State and explain ISO quality standards.
f) Explain RMMM plan in detail.

Q. 4 Attempt any five of the following. (15M)

a) Differentiate between PERT and CPM chart.
b) Demonstrate the need for Gantt chart.
c) Draw an Object diagram for library management system.
d) Differentiate between alpha and beta testing.
e) Explain waterfall model in brief.
f) Explain six sigma for software engineering.

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S4CS
7/10/24

D.B.J College, Chiplun
Sem-IV. ATKT Exam Oct.-2024
Class: S.Y.C.S. Subject:- IoT Technologies
Date:- 7/10/2024 Paper No: IV

Time: 2½ hrs Time:- 2.00 PM to 4.30 PM **Full marks: 75**

Notes:

1. Figures to right indicate full marks.
2. All questions are compulsory. Use internal options to the questions.
3. Illustrations, in-depth answers and diagrams will be appreciated.
4. Mixing of sub-questions is not allowed.

Q1 **Attempt any four of the following.** **20**

a) With the help of a diagram explain physical design of IoT.
b) Explain the communication model of IoT.
c) What are the advantages and disadvantages of SoC? Explain.
d) Elaborate on IoT enabling technologies.
e) State and explain the characteristics of IoT.
f) What are the four layers of IoT architecture? Explain.

Q2 **Attempt any four of the following.** **20**

a) Write a note on pulse width modulation.
b) Explain the typical circuit connections for interfacing an HC-SR04 ultrasonic sensor with an Arduino.
c) What are the major security and privacy issues in IoT? Explain.
d) Elaborate on UPnP protocol.
e) Define the following:
i) Light Dependent Resistor(LDR) ii) Moisture sensor
iii) Gas Sensor iv) Temperature Sensor
v) Level Sensor
f) Briefly Explain MQTT protocol.

Q3 **Attempt any four of the following.** **20**

a) What are the advantages and disadvantages of edge computing?
b) Explain wireless sensor network architecture with block diagram.
c) How IoT applications are used in Transportation? Explain.
d) Write a note on IoT cloud.
e) Elaborate different types of WSNs? Explain.
f) What are the use cases of edge computing? Explain.

Q4 **Attempt any five of the following.** **15**

a) How does M2M works? Explain.
b) Write a note on fog computing.
c) Explain WebSocket-based communication API.
d) What is active and passive sensors? Explain.
e) List and describe the functions of three essential hardware components found on Raspberry Pi boards.
f) What is SoC? Explain.

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54 CS
9/10/24

D. B. J. College, Chiplun
Sem-IV ATKT Exam. Oct. - 2024
Class:- S.Y.C.S. Subject:- Advance Application Development
Date:- 9/10/2024 Paper No:- VI
Time:- 2.00 pm to 4.30 P.M.

Time: - 2 hr. 30 min. **Marks: -75**

N.B. **1) All questions shall be compulsory with internal choice within the questions.**
2) Figures to the right indicate marks.
3) Illustrations, in-depth answers and diagrams will be appreciated.
4) Mixing of sub-questions is not allowed.

Q1 **Attempt any four.** **20**

a) What is Node.js? Where can you use it? Explain.
b) How to create HTTP web server with Node.js? Explain.
c) Explain the directives used in package.json file.
d) Write a note on CRUD operation in MongoDB.
e) What are the most important features of MongoDB? Explain
f) Explain the basic structure of Node.js to angular stack components.

Q2 **Attempt any four.** **20**

a) Write and explain steps to install express module and express object settings.
b) List and explain four main methods for implementing parameters in route.
c) What are the benefits of template engine? How to install EJS module in your application? Explain.
d) Demonstrate the web application that print "Hello Word!" message using angular components.
e) Write a note on dependency injection.
f) How to use NgForOf directive in angular? Explain.

Q3 **Attempt any four.** **20**

a) List and explain steps to install and configure the flutter SDK with android studio.
b) How common flow statements (such as if, and the ternary operator) work in dart? Explain.
c) Explain the stateful and stateless widget lifecycle.
d) How to nest the column and row widgets together to create different UI layouts?
e) Illustrate class and add method to class in dart.
f) Write a note on test operators and Assignment operators in dart.

Q4 **Attempt any four.** **15**

a) Why use dart? Explain.
b) What is routing in node.js? Explain.
c) List and describe any two build-in middleware components that come with express.
d) Why Angular used in application development? Explain.
e) What is flutter? Explain.
f) Write a note on findOneAndDelete().