



RAN - 2011000604020001

**RAN-2011000604020001**

**B.Sc. IT (Sem. IV) Examination April - 2023**

**Fundamental of Embedded System and IOT**

**Time: 3 Hours ]**

**[ Total Marks: 70**

**સૂચના : / Instructions**

(૧)

નીચે દર્શાવેલ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી.  
**Fill up strictly the details of signs on your answer book**

Name of the Examination:

**B.Sc. IT (Sem. IV)**

Name of the Subject :

**Fundamental of Embedded System and IOT**

Subject Code No.: **2011000604020001**

Seat No.:

--	--	--	--	--	--

Student's Signature

**Q.1. Answer the following questions (16)**

**Q.1 A) Answer the following short questions in detail. (Any Four) (04)**

- 1) How many registers are available in each register bank of 8051 microcontroller?
- 2) ARM-7 is \_\_\_\_\_ bit microcontroller?
- 3) How many maximum devices can be allowed in one single piconet of Bluetooth?
- 4) Describe passive RFID tag in detail.
- 5) Mention any four real time embedded system applications.

**Q.1 B) Answer the following questions (Any two) (12)**

- 1) What is sensor? Explain Thermistor and Humidity sensors in detail.
- 2) Write short note on Bluetooth communication channel establishment process.
- 3) What is the Internet of Things(IoT)? Explain ethics requirements of IoT.

**Q.2. Answer the following questions (Any Six) (18)**

- 1) Explain with the help of example how static storage class is different compare to global storage class and auto storage class?
- 2) Describe register storage class in detail and also explain its advantage and limitations.

- 3) Explain "IE" register of 8051 microcontroller.
- 4) Explain Linker and emulator in detail.
- 5) What should be the Design stage objectives of water fall development model? And how these objectives can be fulfillment is possible?
- 6) Explain RFID tag and describe how RFID technology collects data from passive RFID tag?
- 7) Explain Bluetooth piconet and scatternet concept.

**Q.3. Answer the following questions (Any two) (18)**

- 1) A) Write program to find out "ODD values" and "smallest value" from given array `val[6]={84,25,3,32,51,12}` and store odd values in "ODD\_val[06]" array and smallest value in variable "small\_val" in c- language. Write comments for each and every line of program (05)
- B) Write short note on Analog to Digital convertor (ADC). (04)
- 2) Draw 8051 microcontroller's block diagram and Explain different registers of timer device.
- 3) Describe at list four Bitwise operators of c- language with the help of example and program.

**Q.4. Answer the following questions (18)**

**Q.4. A) Answer the following short questions in detail. (Any four) (04)**

- 1) Describe Debugger development tool usability in program development process?
- 2) What is the Usage of "SDA" and "SCL" pin in I2C communication?
- 3) Explain how SPI communication is different than I2C communication?
- 4) How many ports are available with 8051 microcontroller?
- 5) What is the difference between Bluetooth communication and IR communication?

**Q.4. B) Answer the following short questions in detail. (Any Two) (14)**

- 1) Explain IP register and describe how Interrupt priority handling procedure controls simultaneously generated interrupt in 8051 microcontroller based embedded system.
- 2) Explain call by value and call by reference pointer concept with example and program.
- 3) Explain UART communication in detail and also Explain SCON Register of UART.



RAN - 2011000604030001

**RAN-2011000604030001**

**B. Sc. IT (Sem. - IV) Examination April - 2023**

**VB.NET : Paper - 403**

**Time: 3 Hours ]**

**[ Total Marks: 70**

**સૂચના : / Instructions**

(1)

નીચે દર્શાવેલ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી.

Fill up strictly the details of signs on your answer book

Name of the Examination:

B. Sc. IT (Sem. - IV)

Name of the Subject :

VB.NET : Paper - 403

Subject Code No.: 2011000604030001

Seat No.:

<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
----------------------	----------------------	----------------------	----------------------	----------------------	----------------------

Student's Signature

**Q. 1. Do as directed. (Any two)**

**[14]**

1. Explain the components of .NET Framework.
2. What is just-in-time compilation, and how does the Common Language Runtime use it to execute .NET code?
3. How do you handle events in VB.NET and what are some common events used in event-driven programming?

**Q. 2. Do as directed. (Any two)**

**[14]**

1. Explain any Two Container Controls properties, methods with an example.
2. Explain Date Time functions in VB.NET.
3. Discuss ListBox control properties and methods.

**Q. 3. Do as directed. (Any two)**

**[14]**

1. Explain the Types of Assemblies in detail.
2. Discuss MenuStrip control using properties and methods.
3. Explain Option statements in detail with example.

**Q. 4. Do as directed. (Any two) [14]**

1. Explain FontDialog properties, methods with suitable example.
2. Explain CheckBox control properties and methods with suitable example.
3. Explain CLR Components in detail.

**Q. 5. Do as directed. (Any two) [14]**

1. Discuss disconnected architecture of ADO.NET.
  2. Explain Tab control properties and methods with suitable example.
  3. What is the difference between a DataReader and a DataSet in ADO.NET, and when would you use each one?
-



RAN - 2011000604050001

**RAN-2011000604050001**

**B.Sc. (IT) (Sem. IV) Examination April - 2023**

**Web Development - I : Paper 405**

**Time: 3 Hours ]**

**[ Total Marks: 70**

**સૂચના : / Instructions**

(૧)

નીચે દર્શાવેલ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી.  
**Fill up strictly the details of signs on your answer book**

Name of the Examination:

**B.Sc. (IT) (Sem. IV)**

Name of the Subject :

**Web Development - I : Paper 405**

Subject Code No.: **2011000604050001**

Seat No.:

--	--	--	--	--	--

Student's Signature

- (2) All questions are compulsory  
(3) Figures to the right indicate full marks.

**Q.1 Answer the following in short. (Any Seven)**

**[14]**

1. What are the different ways to use JavaScript in a web page?
2. What is jQuery CDN?
3. What is AJAX?
4. What are the key differences between jQuery and JavaScript?
5. Which methods are used to get object of an HTML element by its id and its name?
6. Explain any two methods Date object using example.
7. Explain addEventListener() method with an example.
8. Explain querySelectorAll() method with an example.
9. Compare following two statements.

`<script type="text/JavaScript" src="js/scriptl.js"></script>`

`<script type="text/JavaScript" src="http://www.xyz.com/scriptl.js"></script>`

**Q.2 Answer the following in detail. (Any Two) [14]**

1. How to declare strings in JavaScript? What is special about strings in JavaScript? List and explain important properties and methods of string with example.
2. Write the use of var and let in JavaScript. Compare them with example.
3. How to create and use classes and objects in JavaScript? Explain with example.

**Q.3 Answer the following in detail. (Any Two) [14]**

1. Explain the use of global object in JavaScript with example.
2. Discuss in detail on XML Schema with example.
3. Explain local Storage and session storage objects with example.

**Q.4 Answer the following in detail. (Any Two) [14]**

1. Write a detailed note on screen, location and history object with its properties and methods.
2. What are the basic selectors in jQuery? Explain their usage with example.
3. What is DTD? Demonstrate XML using DTD with example.

**Q.5 Answer the following in detail. (Any Two) [14]**

1. Write a note on regular expressions in JavaScript with examples.
2. Write three separate JavaScript functions that check whether the input string in a textbox object  
1) is Empty 2) is a mobile number 3) is an Integer
3. What is JSON? List and explain its applications. Explain its important functions with example.

---



RAN - 2211000604010002

**RAN-2211000604010002**

**B.Sc. IT (Sem. IV) Examination April - 2023**

**Environmental Studies and Disaster Risk Reduction**

**Time: 3 Hours ]**

**[ Total Marks: 70**

**સૂચના : / Instructions**

(૧)

નીચે દર્શાવેલ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી.  
**Fill up strictly the details of signs on your answer book**

Name of the Examination:

**B.Sc. IT (Sem. IV)**

Name of the Subject :

**Environmental Studies and Disaster Risk Reduction**

Subject Code No.: **2211000604010002**

Seat No.:

--	--	--	--	--	--

Student's Signature

**Q.1 Answer the Following in Detail: (Any 1)**

**14**

1. State the Harmful effects of the changing Environment on the earth today.
2. Which are the Pre- requisites of environmental health.

**Q.2 Answer the following in Brief (Any 7)**

**14**

1. State the importance of value education in improving the quality of environment.
2. Mention the role of Information technology in Environment and human health.
3. State the types of minerals.
4. State the advantages of Solar Energy.
5. How can Disaster be Classified?
6. What is the role of Information technology and education in Disaster Management?
7. State the Man-made causes of pollution.
8. Mention the different sources of energy.

- Q.3 (A) Answer the following in one sentence: (Any 7) 07**
1. Name 3 important Government Institutions involved in Environmental Research.
  2. Name any two reasons for displacement.
  3. Name 2 sources of radioactive pollution.
  4. State the commercial sources of domestic waste.
  5. State 3 environmental problems related to mining.
  6. What is meant by mitigation ?
  7. What is meant by green design?
  8. What is Meteorology?
- Q.3 (B) Discuss the Problems and Issues related to Child and women welfare as a part of Environmental studies. 07**
- Q.4 Write short notes on: (Any 2) 14**
1. Need for Public awareness towards the environment
  2. Mineral Resources
  3. Infectious Diseases
- Q.5 Define the following Terms: (Any 7) 14**
1. Disaster management
  2. Environmental studies
  3. Population Explosion
  4. Rehabilitation
  5. Pollution
  6. Consumerism
  7. Solid waste management
  8. E-waste
-