

Name:	 UPES UNIVERSITY WITH A PURPOSE
Enrolment No:	

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
Online End Semester Examination, May 2021

Course: Java IoT Developer Program: BCA Course Code: CSBC2017	Semester: IV Time 03 hrs. Max. Marks: 100
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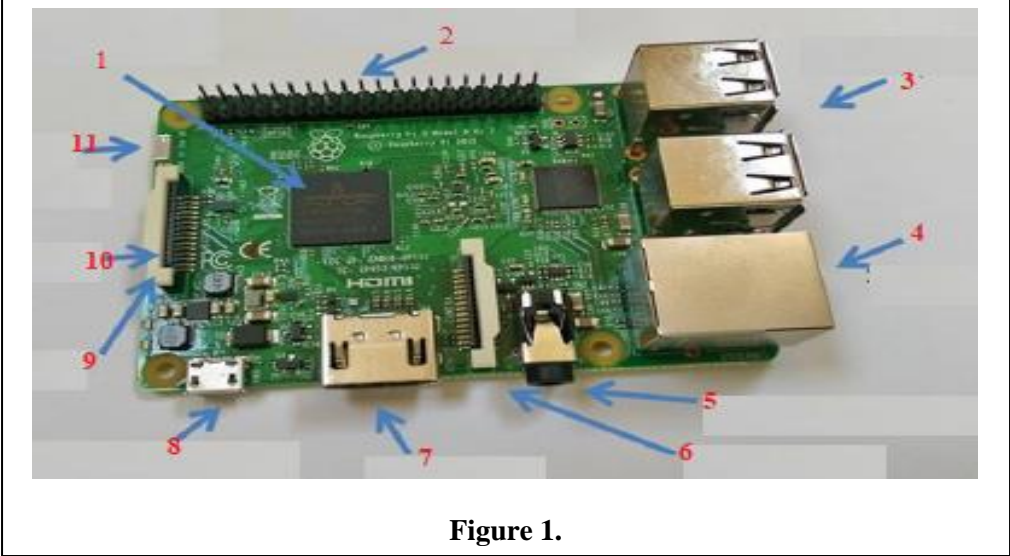
Instructions: Students are supposed to assume any missing data and give examples wherever applicable.

SECTION A [30 Marks]

- 1. Each Question will carry 5 Marks**
- 2. Instruction: Complete the statement / Select the correct answer(s)**

S. No.	Question	CO
Q1.	<p>_____ is the application created by a Java ME software developer, such as a business application, a game or other mobile features.</p> <p style="margin-left: 40px;">a. MIDlet b. Java API c. MIDP d. JAD</p>	CO1
Q2.	<p>_____ designed specifically to meet the needs for a java platform to run on devices with limited memory, processing power and graphical capabilities.</p> <p style="margin-left: 40px;">a. CLDC b. JAR c. AMS d. manifest</p>	CO1
Q3.	<p>_____ is a complex IC that integrates the major functional elements of a computer into a single chip.</p>	CO2

Q4.	<p>_____ is a command used to open the Raspberry Pi configuration screen.</p> <p>a. \$ sudo raspi-config b. \$ sudo apt-get config c. \$ sudo open-raspi-config d. \$ sudo apt-config</p>	CO2
Q5.	<p>_____ is an example of utility software.</p> <p>a. Scandisk. b. Android c. Compiler d. Ubuntu</p>	CO3
Q6.	<p>_____ is the command used through putty to stop a video recording of Camera connected on Raspberry Pi.</p> <p>a. \$ pkill raspivid b. \$ exit raspivid c. \$ raspivid pkill -t d. \$ raspivid exit -t</p>	CO4
<p>SECTION B [50 Marks]</p> <p>1. Each question will carry 10 marks</p> <p>2. Instruction: Write short / brief notes (Scan and Upload)</p> <p>Note*: Attempt any one question of Q5</p>		
Q1.	<p>Design a small JAVA program to control the remote connected camera with Raspberry Pi. The program must have the choice of clicking pics and recording the video through CSI camera module.</p>	CO1
Q2.	<p>Illustrate the entire procedure to setup a Raspberry Pi with Laptop/Desktop. Explain OS part and connecting it with remote system.</p>	CO2

Q3.	 <p style="text-align: center;">Figure 1.</p> <p>Identify the image shown above and label the points 1 to 11. Explain all the points and their usage.</p>	CO3
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Q4.	Discuss the three layers structure of IoT architecture.	CO3
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Q5.	Explain the stepwise procedure for setting up a Raspberry Pi remote access over internet through “ remote.it ”. Discuss the commands that used during the entire process.	
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OR		CO4
	Demonstrate the procedure to connect CSI Camera Module with Raspberry Pi including all the commands required for the process.	

SECTION-C [20 Marks]

1. Each Question carries 20 Marks.

2. Instruction: Write long answer. Give suitable examples/references where applicable (Scan and Upload)

Note*: Attempt any one question

	<p style="text-align: center;"><u>Impacts of COVID-19 on the Information Technology (IT) Industry</u></p> <p>Covid-19 is one of the worst crisis humankind is facing today. It has been a long time since the last human disaster, and we are still unsure how long this pandemic will last. Innumerable people are losing lives around the world every minute, but the world economy has been severely crippled.</p> <p>While the impact of Covid-19 has been severe in many advanced countries, including America, India, UK, Italy, Spain, Russia, France, and Germany, it has also been devastating to the rest of Europe.</p>	CO4
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Many sectors, especially related to tourism, have been completely devastated. Hotels and restaurants, aviation, cabs are among the worst affected.

As per **HDFC securities**, IT sector revenue will see a cut of 2-7 percent due to a delay in decision making in the next six months while businesses assess the impact of the virus. Customers expect to reduce their IT budgets and slow down new initiatives due to the fear of uncertain economic situation and recession.

Infinite future in the IT industry

There are many reasons for the IT industry to gallop at a faster clip than ever before. The world has seen that the internet has been the savior that kept businesses alive. It helped people stay connected to their families and friends. It helped companies remain active during these unprecedented times as employees are working from home. Children are attending school classes remotely. People are consulting doctors online.

Then grocery apps helped people order their monthly supplies online. This is an example of how technology has changed the way we live, work, and play. Online payment apps like Google Pay and Paytm have made life easier for people. They also help us save money by conveniently making payments.

The governments across the world, including India, are preponing roll out of 5G technology. This will further give impetus to telemedicine in India. 5G will also provide a fillip for Smart Cities across the country. IT is and will remain the most significant enabler in the country's growth and development.

Student must review the above comprehension and answer the following.

Think of COVID19 related problems. Now student has to provide the solution of identified problem through IoT based technology. How you will implement. Highlight the various sensors required for your implementation.

Q1. The student must explain it in detail with any of the possible implementation of IoT/Cloud based technologies.

[Hint: Project based on IoT case studies and relate it with COVID19 Pandemic problems. Integration of various sensors, data acquisition and processing]

OR

Briefly explain the various requirements (Hardware/Software) for setting up a Raspberry Pi and accessing it through a putty. Illustrate the procedure to connect LED with GPIO pins and then switching it on/off through your mobile phone.

[Hint: Blynk, authentication token and code]