

DATE: 24/2/2022

Event Coordinator(s)

1. Prof. Tejal Deshpande

Student Coordinator(s)

Time & Place:

24th Feb, 2022

10:45am to 12:15pm

Platform: Online
(Google Meet)

Department:

EXTC

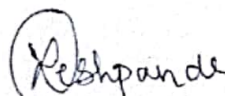
No of participants: 50

Dr. Sapna Prabhu, Professor and Head, at the Department of E&TC Engineering at FR CRCE, Bandra Maharashtra delivered a Guest lecture on "Microcontroller system design and considerations" on Thursday 24th February, 2022 for Second Year students of the Department of Electronics & Telecommunication.

Because of COVID-19 pandemic situation the guest lecture was conducted on Google Meet online platform.

50 participants attended the session. Some of the important topics covered were Basic components of microcontroller, understanding microcontroller specifications, applications of microcontrollers and case studies

The participants found it very informative and well organized. They look forward for more sessions on Applications of Microcontroller.



Signing Authority
Name and Designation



Signing Authority
Name and Designation



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Name and Designation

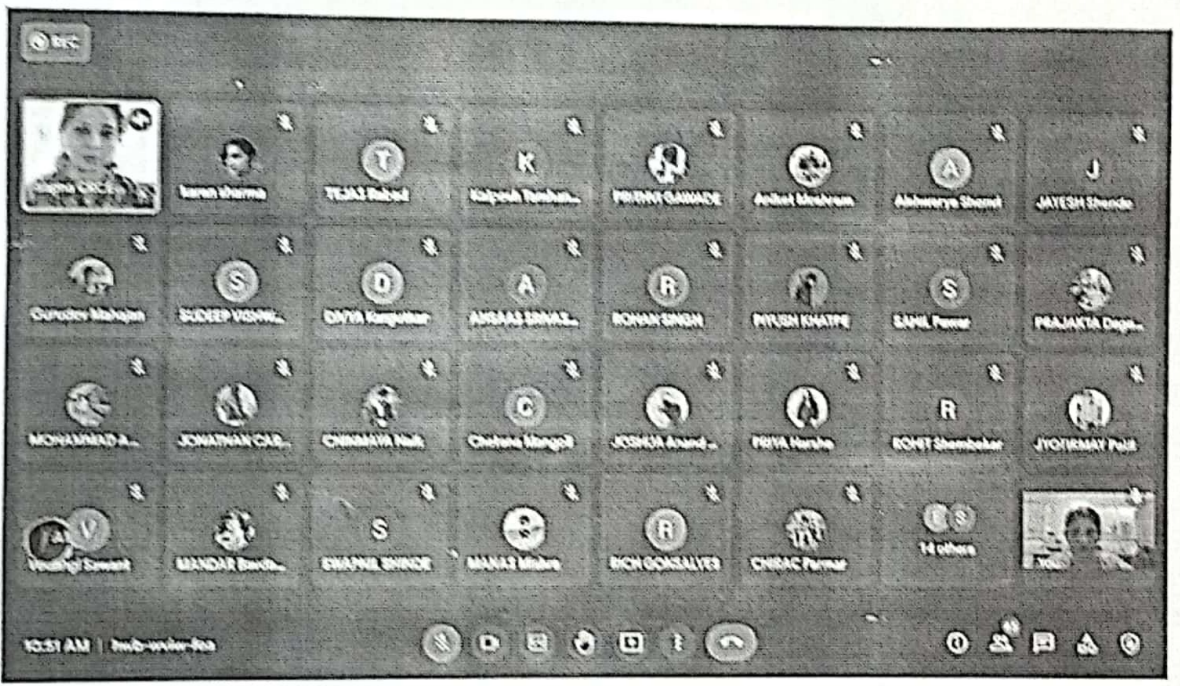
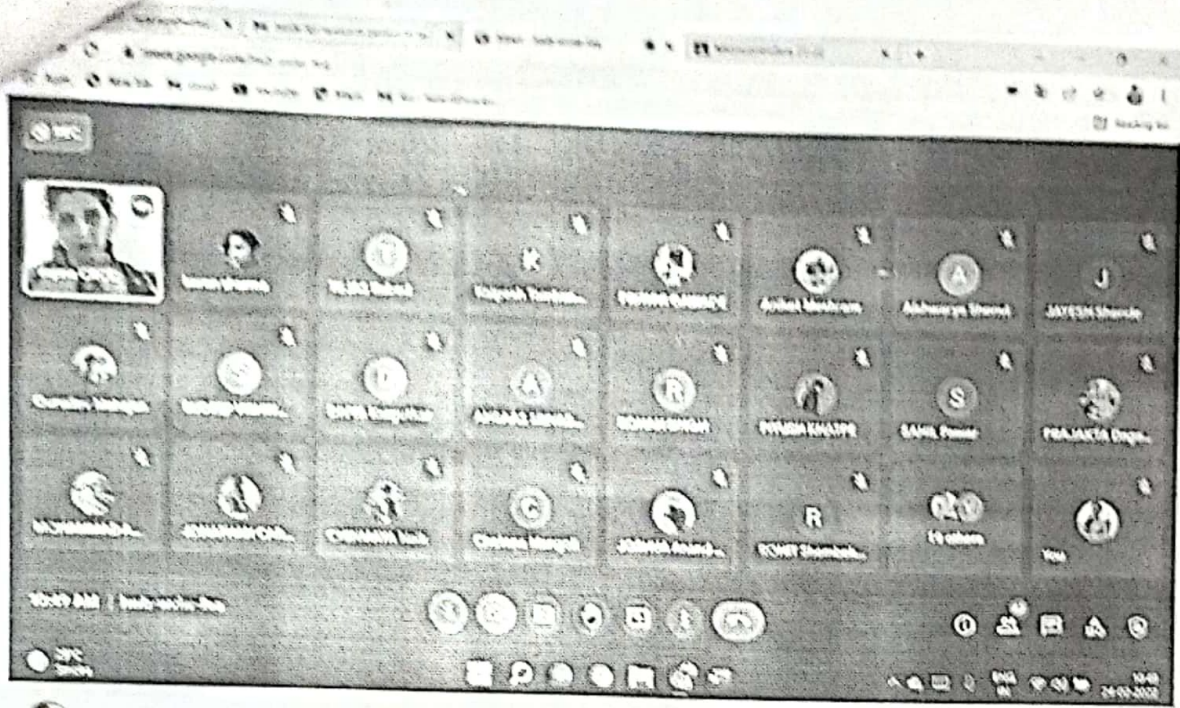
Head of the Department **PRINCIPAL**
Department of Electronics and Telecommunication
Xavier Institute of Engineering
Mahim, Mumbai - 400 016.
Mahim Causeway, Mahim (W), Mumbai - 400 016.

Feedback from Participants:

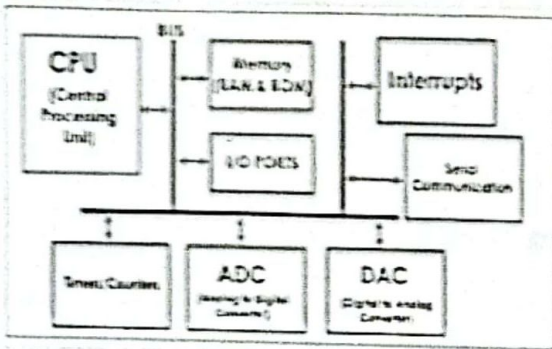
it was vry good
I understood much more about arduino , use of microcontroller
Excellent
Informative
Everything is very excellent ðŸ• no suggestions
waiting for a hands on session on the same
Excellenet, Keep going!!!
Great lecture , would love to attend more such sessions
Sessions on writing codes would be helpful.
It was a very informative session.
Good lecture
LECTURE IS HELPFUL
Nice session
Session was great and very informative thank you!
session like these are much help full
Very informatic
very good session
Projects using Microcontroller
it was a good lec
no suggestion
very nice experience in limited time span mam shared all the basic information with usbasic info
would like to know more about different applications of microcontrollers in coming guest lectures.
Please keep such sessions for a longer period of time so that we can get some good and more knowledge about micro controller

Google form Link of the feedback taken -

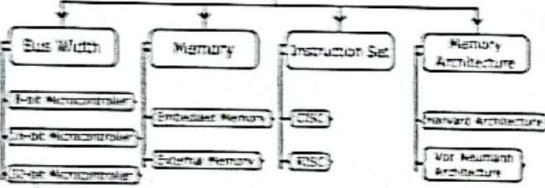
<https://docs.google.com/forms/d/1hIJaBM548UwktiW5y57k2c0pi7aUePSKf2DW9QABsn4/edit>



Basic components of any microcontroller



Microcontroller



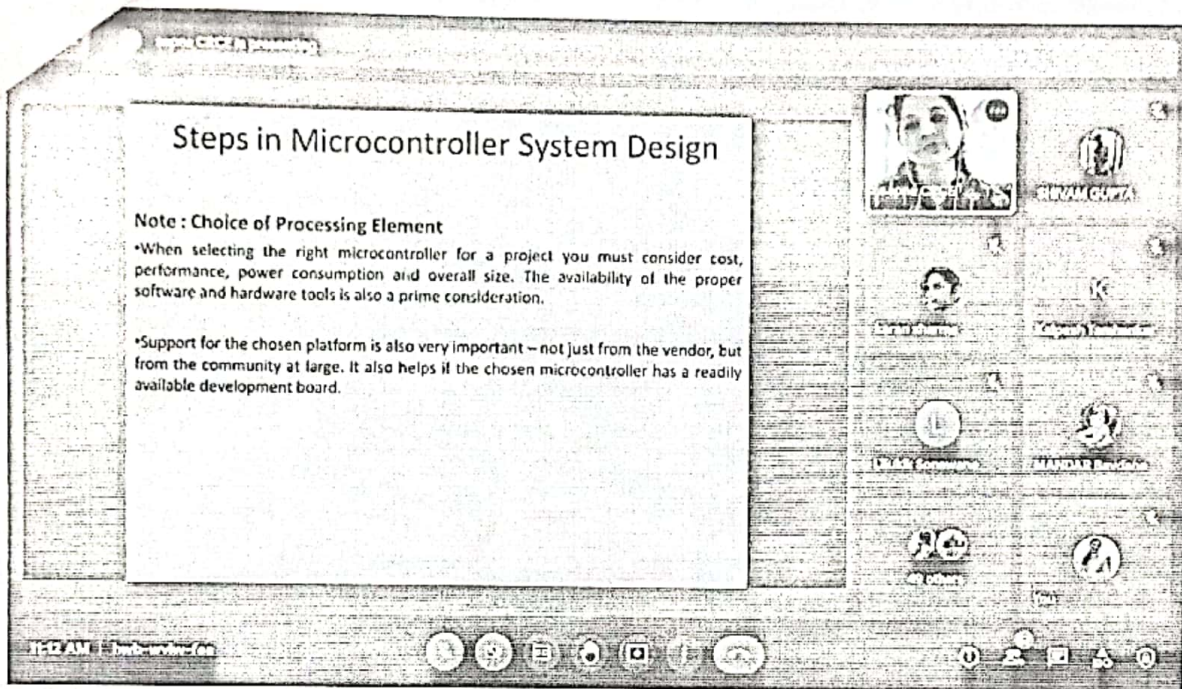
Types of Microcontroller



Steps in Microcontroller System Design

Note : Choice of Processing Element

- When selecting the right microcontroller for a project you must consider cost, performance, power consumption and overall size. The availability of the proper software and hardware tools is also a prime consideration.
- Support for the chosen platform is also very important – not just from the vendor, but from the community at large. It also helps if the chosen microcontroller has a readily available development board.



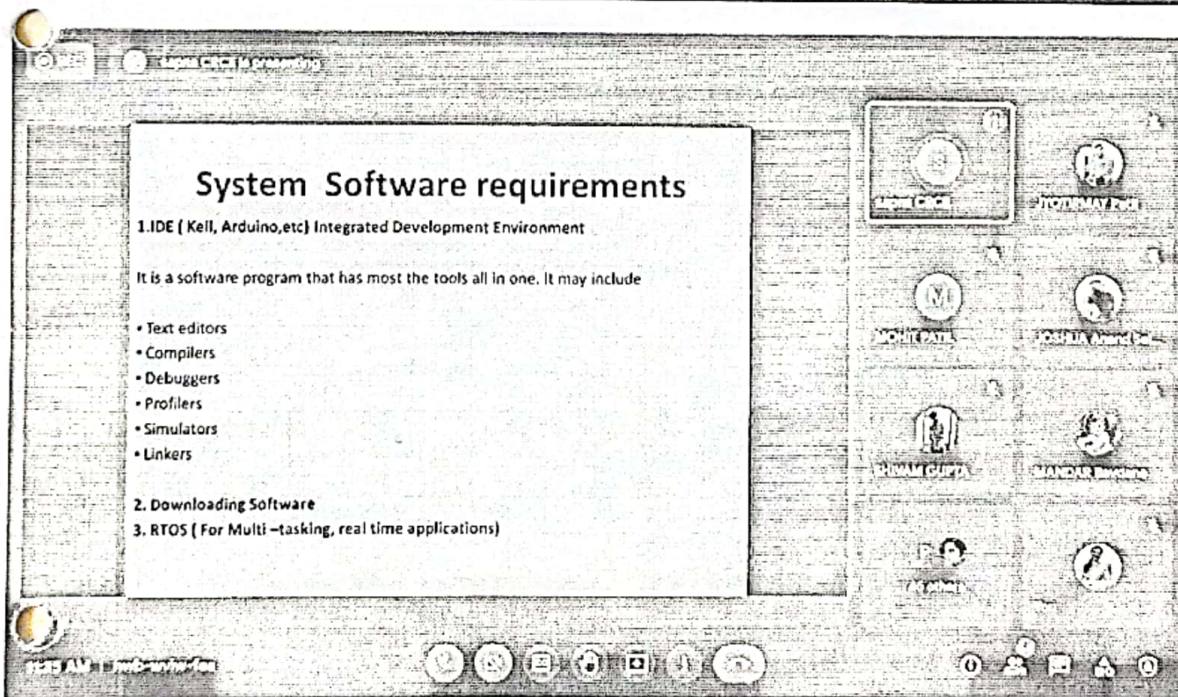
System Software requirements

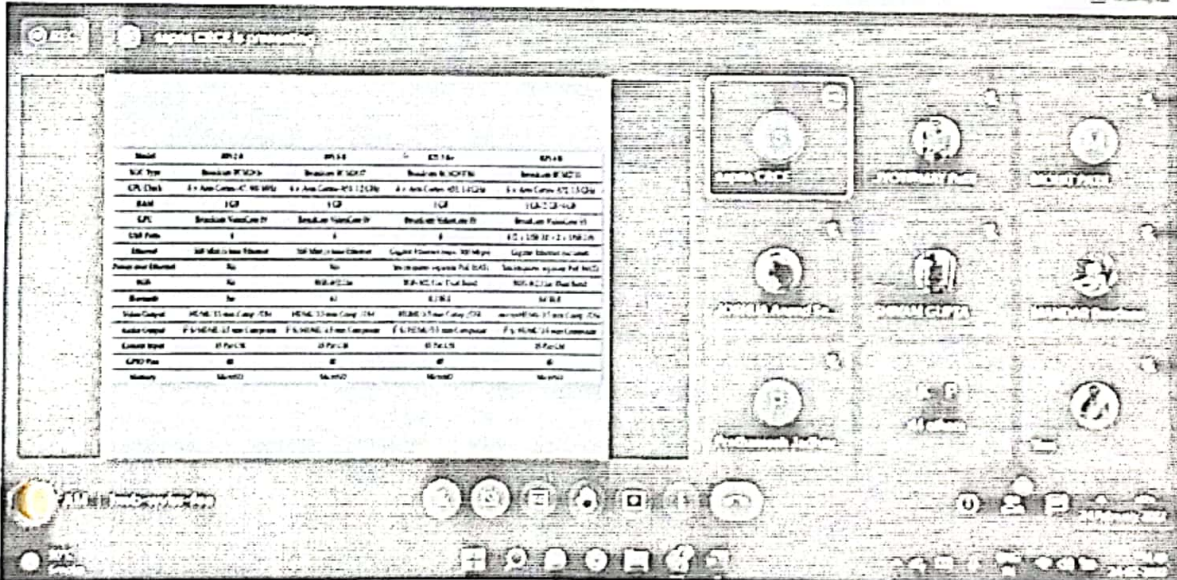
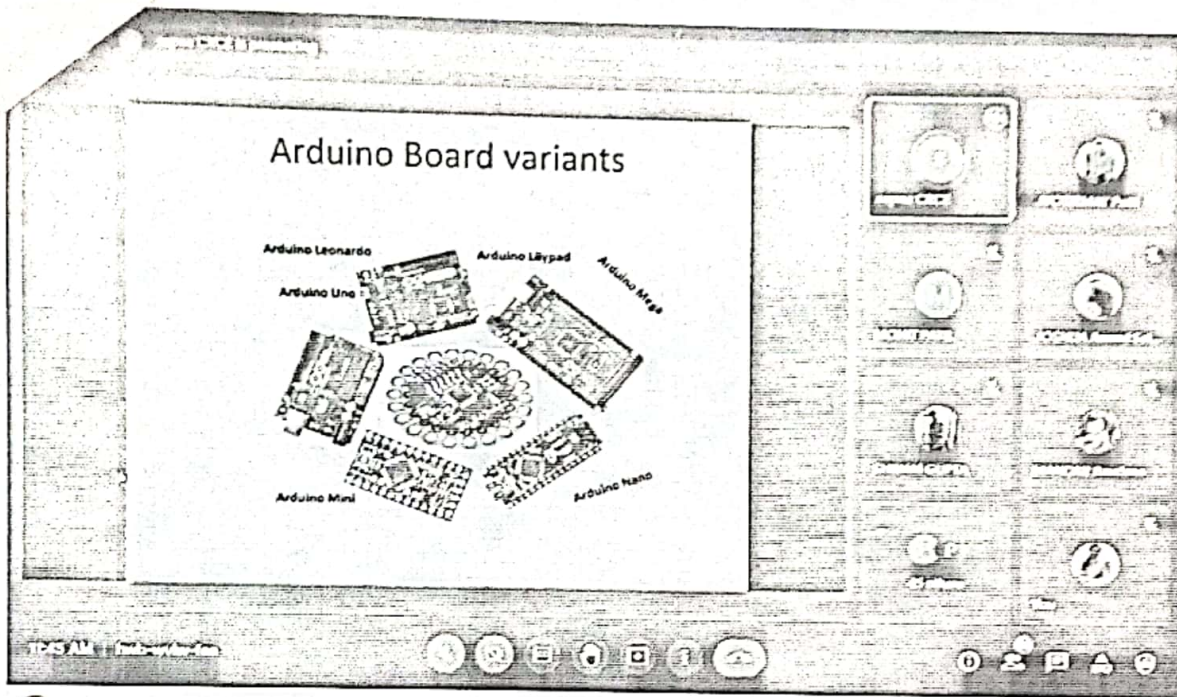
1. IDE (Kell, Arduino, etc) Integrated Development Environment

It is a software program that has most the tools all in one. It may include

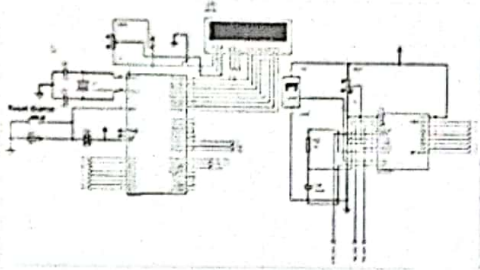
- Text editors
- Compilers
- Debuggers
- Profilers
- Simulators
- Linkers

2. Downloading Software
3. RTOS (For Multi-tasking, real time applications)

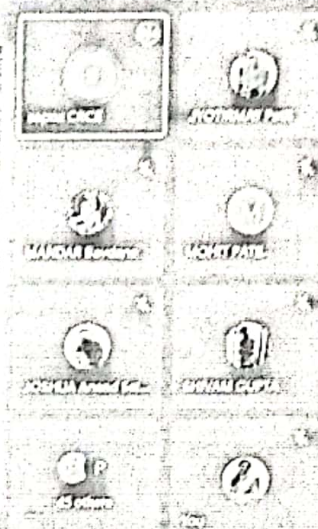




Case Study 1: Temperature monitoring system

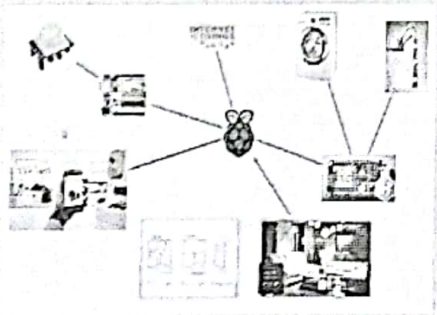


The diagram shows a central microcontroller unit connected to various sensors and actuators. It includes a power supply section, a sensor input section, and an output section with relays and LEDs.




The desktop environment features a top panel with a clock and system tray, a dock with application icons, and a sidebar with a Dash panel containing application icons.

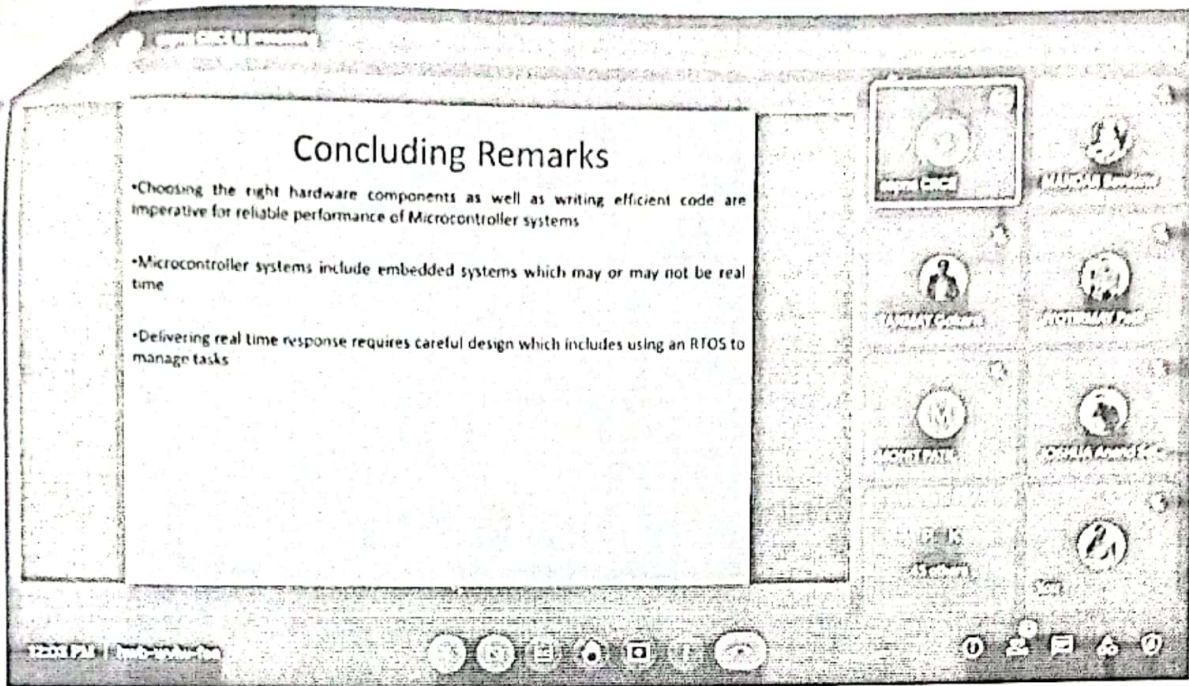
Case Study 2: Home automation



The diagram illustrates a central Raspberry Pi connected to various smart home devices, including a smart TV, smart speakers, smart lighting, and smart locks.



The desktop environment is identical to the one in Case Study 1, showing the Ubuntu interface with a top panel, dock, and sidebar.



Attendance Link –

https://docs.google.com/forms/d/1R4K0I9QXmsK3feCMlyHskBl_IACtBj73RC6MDP7jM74/edit

First name	Last name	Email	Duration	Time joined	Time exited
Prathmesh		jadh*****@***.com	1 hr 33 min	10:39 AM	12:12 PM
JOSHUA	Anand Selvaraj	202002014.joshuaal@student.xavier.ac.in	1 hr 25 min	10:47 AM	12:12 PM
MHAMMAD	ANSARI	202002006.mohammadamz@student.xavier.ac.in	1 hr 28 min	10:45 AM	12:12 PM
MANDAR	Bavdane	202002007.mandarbsl@student.xavier.ac.in	1 hr 35 min	10:38 AM	12:13 PM
EXTC_Ganesh	Baviskar	gane*****@***.com	1 hr 20 min	10:38 AM	12:13 PM
JONATHAN	CARDOZ	202002001.jonathancjj@student.xavier.ac.in	1 hr 31 min	10:41 AM	12:12 PM
PRERNA	Chacharkar	202002029.pernacpc@student.xavier.ac.in	58 min	11:14 AM	12:13 PM
NIRAJ	Chalke	202002008.nirajcch@student.xavier.ac.in	1 hr 7 min	11:05 AM	12:12 PM
CHE TAN	CHAVAN	202002030.chetanchh@student.xavier.ac.in	1 hr 10 min	10:39 AM	12:13 PM

AKASH	Chintakindi	202002009.akashcpg@student.xavier.ac.in	1 hr 31 min	10:39 AM	12:13 PM
sapna	CRCE	sapn*@***.in	1 hr 32 min	10:40 AM	12:12 PM
PRAJAKTA	Dagade	202002031.prajaktadrr@student.xavier.ac.in	1 hr 25 min	10:48 AM	12:13 PM
Tejal	Deshpande	tejal.d@xavier.ac.in	2 hr 1 min	10:12 AM	12:13 PM
ELVIS	DSILVA	202002032.elvisdep@student.xavier.ac.in	1 hr 30 min	10:42 AM	12:12 PM
PRITHVI	GAWADE	202002002.prithvighv@student.xavier.ac.in	1 hr 24 min	10:40 AM	12:13 PM
TANMAY	Gokarn	202002011.tanmaygsa@student.xavier.ac.in	1 hr 20 min	10:38 AM	12:13 PM
JAY	GONSALVES	202002003.jayggm@student.xavier.ac.in	1 hr 33 min	10:39 AM	12:12 PM
RICH	GONSALVES	202002004.richggm@student.xavier.ac.in	1 hr 34 min	10:38 AM	12:12 PM
SHIVAM	GUPTA	202002005.shivamgsr@student.xavier.ac.in	1 hr 34 min	10:38 AM	12:13 PM
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AFFAN	Inamdar	202002013.affanisl@student.xavier.ac.in	1 hr 20 min	10:52 AM	12:12 PM
Prathamesh	Jadhav	2021022005.prathameshjva@student.xavier.ac.in	54 min	11:06 AM	12:02 PM
DIVYA	Kargutkar	202002033.divyakss@student.xavier.ac.in	1 hr 32 min	10:40 AM	12:12 PM
Atharva	Khadye	2021022008.atharvakas@student.xavier.ac.in	1 hr 17 min	10:55 AM	12:13 PM
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PIYUSH	KHATPE	2021022009.piyushksn@student.xavier.ac.in	1 hr 29 min	10:44 AM	12:13 PM
Virudev	Mahajan	guru*****@***.com	1 hr 1 min	10:38 AM	11:39 AM
Chetana	Mangoli	2021022012.chetanammv@student.xavier.ac.in	1 hr 31 min	10:41 AM	12:13 PM
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QASIM	Mohammad	202002018.qasimmat@student.xavier.ac.in	1 hr 31 min	10:42 AM	12:13 PM

VINMAYA	Naik	202002019.chinmayanks@student.xavier.ac.in	1 hr 33 min	10:38 AM	12:12 PM
VINAY	Parab	202002020.vinayprrr@student.xavier.ac.in	1 hr 30 min	10:43 AM	12:12 PM
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JYOTIRMAY	Patil	202002035.jyotirmaypus@student.xavier.ac.in	1 hr 26 min	10:46 AM	12:13 PM
Nishanth	Patil	2021022016.nishanthpds@student.xavier.ac.in	1 min	11:07 AM	11:08 AM
MOHIT	PATIL	202002021.mohitprrr@student.xavier.ac.in	1 hr 35 min	10:38 AM	12:13 PM
SAHIL	Pawar	202002036.sahilpvs@student.xavier.ac.in	1 hr 34 min	10:39 AM	12:13 PM
TEJAS	Rabad	202002022.tejasrr@student.xavier.ac.in	1 hr 21 min	10:48 AM	12:09 PM
SAURAV	RAJAK	2021022018.sauravrlv@student.xavier.ac.in	45 min	11:28 AM	12:13 PM
JARASHREE	Salvi	202002023.swarashreesrr@student.xavier.ac.in	1 hr 33 min	10:40 AM	12:13 PM
PRACHET	SAUL	2021022020.prachetsjp@student.xavier.ac.in	52 min	10:58 AM	12:13 PM
HARSH	Sawant	202002037.harshssu@student.xavier.ac.in	1 hr 21 min	10:52 AM	12:13 PM
Vedangi	Sawant	2021022021.vedangisrr@student.xavier.ac.in	1 hr 33 min	10:40 AM	12:13 PM
karan	sharma	kara*****@***.com	1 hr 1 min	10:38 AM	11:39 AM
ROHIT	Shembekar	202002024.rohitsgv@student.xavier.ac.in	1 hr 32 min	10:41 AM	12:12 PM
JAYESH	Shende	202002025.jayeshsvm@student.xavier.ac.in	1 hr 35 min	10:38 AM	12:13 PM
Aishwarya	Shenvi	2021022025.aishwaryasrr@student.xavier.ac.in	1 hr 30 min	10:42 AM	12:13 PM
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ROHAN	SINGH	202002026.rohansra@student.xavier.ac.in	1 hr 29 min	10:44 AM	12:13 PM
Laukik	Sonawane	2021022027.laukiksrn@student.xavier.ac.in	10 min	11:11 AM	11:39 AM
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Dhruvil	Tailor	2021022028.dhruviltvn@student.xavier.ac.in	1 hr 22 min	10:51 AM	12:13 PM
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SUDEEP	VISHWAKARMA	2021022031.sudeepvds@student.xavier.ac.in	59 min	10:41 AM	12:02 PM

	Wadkar	2021022032.omkarwda@student.xavier.ac.in	1 hr 23 min	10:49 AM	12:13 PM
ADITYA	WALMIKI	202002028.adityawgr@student.xavier.ac.in	1 hr 24 min	10:42 AM	12:13 PM

MCQ – Taken on ERP

MCQ Questions

Question *	Option1 *	Option2 *	Option3	Option 4	Option 5	Correct Option No. (Choose only from given values) *
8051 series has how many 16 bit registers?	2	3	1	0		Option1
On power up, the 8051 uses which RAM locations for register R0- R7	00-2F	00-07	00-7F	00-0F		Option2
How many bytes of bit addressable memory is present in 8051 based microcontrollers?	8bytes	32bytes	16bytes	128 bytes		Option3
What is the function of the TMOD register?	TMOD register is used to set various operation modes of timer/counter	TMOD register is used to load the count of the timer	Is the destination or the final register where the result is obtained after the operation of the timer		Is used to interrupt the timer	Option1
Consider a four bit ALU which does four bit arithmetic. When the following four bit numbers are added, what is the status of NZCV flags? 1101+ 1011	NZCV = 0111	NZCV = 1000	NZCV = 1001	NZ CV = 101 0		Option4
An instruction that is used to move data from an ARM Register to a Status Register (CPSR or SPSR) is called _____.	MRC	MRS	MSR	MC S		Option3
R1 = 0b1111, R2 = 0b0101, BIC R0, R1, R2	R0 = 0b1010	R0 = 0b1111	R0 = 0b0101	R0 = 0b1 100		Option1
The memory which is used to store a copy of data or instructions stored in larger memories, inside the CPU is called _____.	Level 1 cache	MMU	Registers	TLB		Option1
How much flash memory does the Atmega328 have?	13K bytes	32K bytes	256K bytes	16K byt es		Option2

What is the operating voltage of Atmega328?	12V to 9V	1.9V to 5V	1.8V to 5.5V	1.1 V to 5V	Option3
Which Arduino Boards use the Atmega328?	Arduino Uno	Arduino Mega	Arduino Flo	Arduino Du e	Option1
What is the difference between the 8031 and the 8051?	The 8031 has no interrupts.	The 8031 is ROM-less.	The 8051 is ROM-less.	The 8051 has 64 bytes more memory.	Option2
The ADC0804 has _____ resolution.	4-bit	8-bit	16-bit	32-bit	Option2
When the processor is executing in ARM state, then all instructions are _____ wide	8-bits	16-bits	32-bits	64-bits	Option3
What is the standard form of ASR?	Automatic Shift Right	ARM Shift Right	Arithmetic Shift Right	None of the above	Option3