Vivekanand College, Kolhapur (Autonomous)
Department of Electronics

Notice Date: 03/01/2022

All the student of B.Sc.-I hereby informed that, the internal exam of Electronics Sem I will be held in **offline mode**. The detail time table is given below.

Paper	Section title	Marks	Date	Time
I	DSC-1005A1 ANALOG ELECTRONICS-I	15	12/01/2022	2.00 pm to 2.45 pm
II	DSC-1005B1 DIGITAL ELECTRONICS-I	15	05/01/2022	2.00 pm to 2.45 pm

VIVEKANAND COLLEGE ESTD. JUNE 1964 KOLHAPUR-416 003

(Dr. C. B. Patil)
Head
Department of Electronics
Vivekanand College, Kolhapur.

Internal Exam

Subject: - Electronics-I 2021-2022 Date:-12/01/2022 Marks:-15

Q.1:- Select the Correct alternative and rewrite (3 Marks)

a) Which of the following statement is not made by Ohms law?
   1. Current is directly proportional to voltage
   2. Current is inversely proportional to resistance
   3. Current is directly proportional to the resistance
   4. None of these

b) According to Kirchhoff's voltage law , the algebraic sum of all I.R drops and emfs in a closed path (or a loop) is
   1. Positive 2. Negative 3. Zero 4. None of the above

c) The Thevenin's equivalent resistance (R_{th}) is found by,
   1. Short circuiting the given two terminals
   2. Removing voltages sources by their internal resistances.
   3. Removing current sources by their internal resistances.
   4. Both 2 and 3

Q.2) Attempt any three (3*4=12 Marks)

1. Write a note of resistor.
2. State and explain Kirchhoff's current law.
3. State and explain Kirchhoff's Voltage law.
4. Write a note on Capacitor.
5. State and explain the following network theorems
   i) Thevenin's theorem ii) Norton's theorem

Vivekanand College, Kolhapur (Autonomous)

Department of Electronics

Internal Exam | Subject: - Electronics | Class:-B.Sc-I

2021-2022 | Date:-05/01/2022 | Marks:-15

Q.1:- Select the Correct alternative and rewrite (3 Marks)

1. Radix of the decimal number system is……..

   a) 1 b) 2 c) 8 d) 10

2. 2's complement of 1000 is……

   a) 0000 b) 1000 c) 1100 d) 1001

3. In Boolean algebra A+A=…….

   a) A b) 0 c) 1 d) 2A

Q.2. Attempt any three (3*4=12 Marks)

1. Perform the following

   a) $(24)_{10} = (\ldots\ldots\ldots)_2$ b) $(123)_{16}=(\ldots\ldots)_{10}$

   c) $(10101.101)_2 = (\ldots\ldots\ldots)_{16}$ d) $(525)_{10}=(\ldots.)_{BCD}$

2. Write a rules of binary addition and subtraction
3. Write a note on ASCII code
4. Explain any three gates using symbol and truth-table
5. Sate and prove Demorgan's first theorem with logic diagram and truth-table

VIVEKANAND COLLEGE ESTD. JUNE 1964 KOLHAPUR-416 003

Vivekanand College, Kolhapur (Autonomous)
Department of Electronics

Notice Date: 12/05/2022

All the student of B.Sc.-I hereby informed that, the internal exam of Electronics Sem II will be held in **offline mode**. The detail time table is given below.

Paper	Section title	Marks	Date	Time
III	DSC-1005B1 ANALOG ELECTRONICS-II	15	23/05/2022	2.00 pm to 2.45 pm
IV	DSC-1005B1 DIGITAL ELECTRONICS-II	15	18/05/2022	2.00 pm to 2.45 pm

VIVEKANAND COLLEGE KOLHAPUR (AUTO.) ESTD. JUNE 1964

(Dr. C. B. Patil)
Head
Department of Electronics
Vivekanand College, Kolhapur.

ज्ञान विज्ञान आणि सुसंस्कार यांसाठी शिक्षणप्रसार"

शिक्षणमहर्षी डॉ. बापूजी साळूंखे

श्री. स्वामी विवेकानंद शिक्षण संस्था, कोल्हापूरचे

विवेकानंद कॉलेज (स्वायत्त),कोल्हापूर.

Class: B.Sc. (Part-I) Semester-II Internal Examination

Date:-23/05/2022 Subject: Analog Electronics II Marks: 15

Q.1. Select the correct alternative for the following **(5 Marks)**

1. The emitter of a transistor is ..... doped

   (a) lightly (b) heavily (c) moderately (d) none of the above

2. The value of α of a transistor is .....

   (a) more than 1 (b) less than 1 (c) 1 (d) none of the above

3. If the value of α is 0.9, then value of β is .....

   (a) 0.9 (b) 9 (c) 90 (d) 900

4. If biasing is not done in an amplifier circuit, it results in.....

   (a) decrease in base current (b) unfaithful amplification

   (c) excessive collector bias (d) none of these

5. In class-A operation, the operating point is generally located ..... of the d.c. load line.

   (a) at cut off point (b) at the middle (c) at saturation point (d) none of these

Q.2. Attempt any TWO: **(2*5=10 Marks)**

1. Define α and β ? Derive the relation between them.
2. Draw circuit arrangement to determine the output characteristics of CE configuration and explain output characteristics..
3. Draw the circuit diagram of potential divider method and analyze it.
4. Draw the circuit diagram of two-stage RC coupled amplifier and explain it.

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Class: B.Sc. (Part-I) Semester-II Internal Examination

Date:-18/05/2022 Subject: Digital Electronics II Marks:15

Q.1. Select the correct alternative for the following **(3 Marks)**

1. Flip flops are also called .....

   a) bistable transformer b) bistable multivibrator

   c) astable multivibrator d) none of these

2. The logic circuits whose output at any instant of time depends only on the present input but also on the past outputs are called .....

   (a) Combinational circuits (b) sequential circuits

   (c) latches (d) flip-flops

3. In binary weighted DAC, the lowest value resistor corresponds to .....

   (a) the highest binary weighted input

   (b) the lowest binary weighted input

   (c) the first input

   (d) the last input

Q.2. Attempt any three **(3*4=12 Marks)**

1. Explain working of RS latch using NOR gates.
2. Explain working of D flip-flop with suitable diagram.
3. Explain preset and clear concept in flip-flop
4. Explain binary weighted Register D/A converter.
5. Explain R-2R Ladder D/A Converter.
6. Write a note on Successive Approximation type A/D converter.

Vivekanand College, Kolhapur (Autonomous)
Department of Electronics
Notice

Date: 27.12.2021

All the students of B.Sc. II Electronics are hereby informed that their internal examination for Semester III will be conducted in offline mode as per attached schedule.

Paper	Section	Section title	Marks	Date	Time
IV DSC - 1005C	I	Electronic Communication	10	11.01.2022	04:15 to 05:00 pm
IV DSC- 1005C	II	Microprocessor 8085	10	10.01.2022	02:45 to 03:30 pm

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(Dr. C. B. Patil)
Head
Department of Electronics
Vivekanand College, Kolhapur.

Vivekanand College (Autonomous), Kolhapur

Internal Examination (21-22)

B.Sc. II Electronics Semester – III, Paper - III

DSC -1005 C: Electronics Communication and Microprocessor 8085

Section-II Microprocessor 8085 **Date: 10-01-2022**

Total Marks: 10 **Time: 1 hour**

Q.1: Select correct alternative: **[2]**

1)---------is/are the example/s of ROM.

a) EPROM b) MASK c) EEPROM d) all of these

2) 8085 microprocessor has ----bit data bus and -----. bit address bus.

a) 4 and 8 b) 8 and 16 c) 16 and 8 d) 8 and 8

Q.2: Answer any TWO [4 marks each] **[8]**

1) Draw the neat schematic showing the interface between 8085 microprocessor and2764 EPROM. And write only the memory map.
2) Explain in brief the Flag register.
3) Write a note on 8085 programmable registers.
4) Draw the timing diagram of MOV A, B operation and explain it.

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Internal Examination: 2021- 22

B.Sc-II Electronics, Sem-III, Paper-III

Section-I Electronics Communication **Date: 11.01.2022**

Total Marks: 10 **Time: 1 hour**

Question 1- Select Correct alternative **2 Marks**

1. ------- is the name given to simultaneous two-way communication.

a.	Simplex	b.	half duplex
c.	Full duplex	d.	None of these

2. ------ is a general term that is used to describe an unwanted signal which affects a wanted signal.

a.	Radio waves	b.	Noise
c.	Bandwidth	d.	None of these

Question 2- Answer any two (4 marks each) **8 Marks**

1. Explain the concept of noise and explain the classification of noise as an external noise and internal noise.
2. Explain the simplex and duplex communication system with example
3. What is amplitude modulation? Obtain the mathematical expression of amplitude modulated wave.
4. Define the following terms
    a. Bandwidth.
    b. Communication Channel.
    c. Baseband signal.
    d. Broadband signal.

Vivekanand College, Kolhapur (Autonomous)
Department of Electronics
Notice

Date: 09.05.2022

All the students of B.Sc. II Electronics are hereby informed that their internal examination for Semester IV will be conducted in offline mode as per attached schedule.

Paper	Section	Section title	Marks	Date	Time
IV DSC - 1005D	I	Advanced Communication	10	14.05.2022	03:30 to 04:15 pm
IV DSC- 1005D	II	Microcontroller 8051	10	24.05.2022	04:30 05:15 to pm

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(Dr. C. B. Patil)
Head
Department of Electronics
Vivekanand College, Kolhapur.

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विवेकानंद कॉलेज (स्वायत्त),कोल्हापूर.

Class: B.Sc. (Part-II) Semester-IV Internal Examination

Date:-14/05/2022 Subject: Advance Communication Marks: 10

Q.1. Attempt any TWO: **(2*3=6 Marks)**

1. What are the different factors that decide the channel capacity?
2. State and explain Nyquist Sampling Theorem.
3. Write a note on TDM.

Q.2. Attempt any ONE: **(1*4=4 Marks)**

4. Explain the basic principle of PAM with its block diagram.
5. What is mean by PWM? Explain with block diagram and wave form.

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विवेकानंद कॉलेज (स्वायत्त),कोल्हापूर.

Class: B.Sc. (Part-II) Semester-IV Internal Examination

Date:-24/05/2022 Subject: Microcontroller 8051 Marks: 10

Q.1. Attempt any TWO: **(2*5=10 Marks)**

1. Explain the RAM and ROM structure/organization of 8051.
2. Draw the pin diagram of 8051 and give any four features of 8051.
3. Describe any five arithmetic instructions
4. Describe any five Bit manipulation instructions.

Vivekanand College, Kolhapur (Autonomous)
Department of Electronics

Notice Date: 03/01/2022

All the student of B.Sc.-III hereby informed that, the internal exam of Sem V will be held in offline mode. The detail time table is given below.

Paper	Section	Section title	Marks	Date	Time
DSE 1005E1	I & II	Linear Integrated Circuit & 8051 Microcontroller Interfacing and Embedded C	20	10/01/2022	12.15pm to 01.15 pm
DSE 1005E2	I & II	Instrumentation & Antenna and Wave Propagation	20	13/01/2022	12.15pm to 01.15 pm

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(Dr. C. B. Patil)
Head
Department of Electronics
Vivekanand College, Kolhapur.

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Internal Examination (2021-2022)

Class:-B.Sc-III Sem:-V Subject:-Electronics

Paper:-Linear Integrated Circuits Marks:-10 date:-10/01/2022

.....

Q.1: Fill in the blanks (2 Marks)

1. The main advantage of differential amplifier is that it rejects.....
   a) Common mode signal b) distortion
   c) differential mode signal d) noise
2. Offset null pins provided to IC 741 are.....
   a) 2 and 4 b) 3 and 5c) 1 and 5 d) none of these

Q.2.: Attempt any Two (2*4=8 Marks)

1. Explain any four parameters of OP-amp
2. Explain block diagram of op-amp
3. Explain basic differential amplifier using basic differential amplifier circuit
4. Explain current mirror circuit with the neat circuit diagram.

Vivekanand College (Autonomous), Kolhapur

Internal Examination (21-22)

B.Sc. III Electronics Semester – V, Paper – V DSE 1005E1

Linear Integrated Circuits, 8051 Microcontroller Interfacing and Embedded C

Section-II 8051 Microcontroller Interfacing and Embedded C

Date: 10-01-2022

Total Marks: 10 **Time: 1 hour**

Q.1: Select correct alternative: **[2]**

1) Super loop/s in 8051 C is/are ----------.

a) for(; ;) b) while(1) c) if-else d) both (a) and (b)

2) To write into data register of LCD, the signals on the lines should be ------

a) RS = 0; RW = 0 b) RS = 0; RW = 1

c) RS = 1; RW = 0 d) RS = 1; RW = 1

Q.2: Answer any TWO [4 marks each] **[8]**

1) Tabulate various Data types in 8051-C.

2) Draw an interfacing diagram of LED with 8051 and write 8051-C program to blink Led with certain time interval.

3) Draw an interfacing diagram of single seven segment display with 8051 and write 8051-C program to display 0-9 numbers continuously with certain time interval.

4) Draw an interfacing diagram of ADC 0804 with 8051 and write 8051-C program to accept analog input data, convert it and output it on P2.

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Internal Examination: 2021- 22

B.Sc-III Electronics, Sem-V, Paper-DSE 1005E2

Section-II Antenna and wave propagation **Date: 13.01.2022**

Total Marks: 10 **Time: 1 hour**

Question 1- Select Correct alternative **2 marks**

1. ------- is the nature of the radiation pattern of an isotropic antenna?

a.	Spherical	b.	Dough-nut
c.	Elliptical	d.	Hyperbolic

2 ..... transmitting or receiving system that is designed to radiate or receive electromagnetic waves.

a.	Electron gun	b.	Data logger
c.	Antenna	d.	None of these

Question 2- Answer any two (4 marks each) **8 marks**

1. Define Antenna and Explain the following term related to antenna.
   a. Directivity
   b. Gain
2. Explain radiation mechanism in two wire antennas.
3. Define the radiation pattern of antenna. Explain the following term related to radiation pattern.
   a. Major and Minor lobes
   b. Half-Power Beam Width (HPBW)
   c. Omnidirectional radiation pattern
   d. Directional radiation pattern
4. Define the following term related to antenna.
   a. Bandwidth.
   b. Antenna impedance
   c. Antenna efficiency.
   d. Polarization

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Department of Electronics

Notice Date: 19/05/2022

All the student of B.Sc.-III hereby informed that, the internal exam of Electronics Paper-III, Section-I will be held on 23/05/2022 to 24/05/2022 in offline mode. The detail time table is given below.

Paper	Section	Section title	Marks	Date	Time
DSE 1005F1	I & II	Industrial Process control , PLC Programming and Advanced Microcontroller	20	23/05/2022	12.15pm to 01.15 pm
DSE 1005F2	I & II	Power Electronics, FPGA & VHDL Programming	20	24/05/2022	12.15pm to 01.15 pm

Syllabus:

Topic 1: **Question Paper format:**

Q.1 Objectives (Four) =04 Marks

Q.2 Short answer (Section-I) (Solve any two out of four) = 08 Marks

Q.3 Short answer (Section-II) (Solve any two out of four) = 08 Marks

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(Dr. C. B. Patil)
Head
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Class: B.Sc. (Part-III) Semester-VI Internal Examination

Subject: **Industrial Process control, PLC Programming and Advanced Microcontroller** Marks: 20

Date:-23/05/2022

Time: - 12.15 pm to 1.15 pm

Internal Examination

1. Objectives four (sec-1 two, sec-2 two) - 4 marks
2. short answer section-1 any two from 4 - 8 marks
3. short answer section-2 any two from 4 - 8 marks

Q. 1) Select the Correct alternative and rewrite. **(4 Marks)**

a. Automatic electric Iron is an example of _____.

i) open loop system ii) closed loop system iii) both I and ii c) none of these

b. In Open-loop control systems are _____ stable.

i) less ii) more iii) moderate iv) none of these

c. _____ is configured to perform a specific dedicated application.

i) Mechanical system ii) Electrical system

iii) Embedded system iv) None of these

d. In embedded system data is stored in _____ and code is stored in _____.

i) RAM RAM ii) RAM ROM

iii) ROM ROM iv) ROM RAM

Q.2) Attempt any two **(2*4=8 Marks)**

a) Write a note on open loop control system and close loop control system.

b) Explain DC motor speed control system with suitable block diagram.

c) Write a note on feed forward control system.

d) Explain classifications of control system.

Q.3) Attempt any two **(2*4=8 Marks)**

a. Explain block diagram of hardware architecture of embedded system.

b. Describe the pin diagram of AtMega8 microcontroller.

c. Explain the features of AtMega8 microcontroller.

d. Describe the Status register.

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विवेकानंद कॉलेज (स्वायत्त),कोल्हापूर.

Class: B.Sc. (Part-III) Semester-VI Internal Examination

Date:-24/05/2022 Subject: Power Electronics, FPGA & VHDL Programming

Marks: 20

Q1. Select the correct Alternative: **4 Marks**

1) In a power transistor, _____ is the controlling parameter.

A] V_{BE} B] V_{CE}

C] I_C D] I_B

2) A modern power semiconductor device that combines the characteristic of BJT and MOSFET is -----

A] TRIAC B] JFET

C] IGBT D] SCR

3) Vertical and horizontal directions in FPGA are separated by_____

A] A channel B] A line

C] A flip-flop D] A strobe

4) The complex programmable logic device (CPLD) contains several PLD blocks and:

A] a language compiler B] AND/OR Array

C] a global interconnection network D] field programmable switches

Q.2 Attempt any two (4 Marks each) **8 Marks**

1. What is mean by power electronics? Explain the need of semiconductor power devices.
2. Explain the basic structure and I-V characteristics of power diode.
3. Explain the basic structure of power transistor.
4. Explain the operation of series and parallel connected diode.

Q.3 Attempt any two (4 Marks each) **8 Marks**

1. What is FPGA? Explain the architecture of FPGA with block diagram
2. What are the clock distribution topologies? Explain any one of them.
3. Write short note on Programmable array Logic (PAL)
4. Explain configurable logic block (CLB's) and LUT's (Look up Table) of FPGA