

Vivekanand College, Kolhapur

(An Empowered Autonomous Institute)

Department of Electronics

Internal Examination Notice

Date: 05/03/2026

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

Paper Code	Section Title	Marks	Date	Time
2DSC03ELE41	Linear Integrated Circuits	10	13/03/2026	03:00 PM
2DSC03ELE42	Microcontroller 8051	10	13/03/2026	03:30 PM



[Signature]
HEAD
DEPARTMENT OF ELECTRONICS
VIVEKANAND COLLEGE, KOLHAPUR
(EMPOWERED AUTONOMOUS)

Vivekanand College, Kolhapur

(An Empowered Autonomous Institute)

Department of Electronics

Internal Examination Notice

Date: 06/03/2026

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

Paper Code	Section Title	Marks	Date	Time
2MIN03ELE41	Fundamentals of Operational Amplifiers	10	14/03/2026	03:00 PM
2MIN03ELE42	Microcontroller and Embedded C	10	14/03/2026	03:30 PM



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HEAD
DEPARTMENT OF ELECTRONICS
VIVEKANAND COLLEGE, KOLHAPUR
(EMPOWERED AUTONOMOUS)

B.Sc-II, Internal Exam
Sem-IV 2025-26

Vivekanand College, Kolhapur
(An Empowered Autonomous Institute)
B.Sc. II (SEM-IV) Minor Electronics
Internal Exam Attendance Sheet 2025-26

Sr No	Roll No	Student Name	Date: 14/03/2026 02:30 to 04:00 pm	
			2MIN03ELE41	2MIN03ELE42
1	7712	KUMBHAR ADITI SANDIP	<u>Admbhar.</u>	<u>Admbhar.</u>
2	7713	POWAR SAMRUDDHI KRUSHNAT	<u>Powar</u>	<u>Powar</u>
3	7714	DIXIT SAMRUDDHI SATYA	<u>Dixit</u>	<u>Dixit</u>
4	7715	MANE DINESH DATTATRAY	<u>Mane</u>	<u>Mane</u>
5	7716	PATIL ANUSHKA JINGONDA	<u>Patil</u>	<u>Patil</u>
6	7763	CHANDREKAR VIGHNESH RAJESH	<u>Chand</u>	<u>Chand</u>
7	7764	JOHAR ADARSH RAVINDRA	<u>Adhar</u>	<u>Adhar</u>
8	7765	KUMBHAR JAYDEEP SHANKAR	<u>Jay</u>	<u>Jay</u>
9	7766	KUWALEKAR KOUSTUBH BHASKAR	<u>Koush</u>	<u>Koush</u>
10	7767	LOKHANDE APURVA DILIP	<u>Lokhande</u>	<u>Lokhande</u>
11	7768	MALAGE PRATIKRAJ JAYKUMAR	<u>Malage</u>	<u>Malage</u>
12	7769	MANE AVIRAJ BALKRISHNA	<u>Aviraj</u>	<u>Aviraj</u>
13	7770	MASARANKAR SAMIKSHA GOVIND	<u>Mas</u>	<u>Mas</u>
14	7771	MOHITE ARJUN KIRAN	<u>Arjun</u>	<u>Arjun</u>
15	7772	PATIL ADITYA SHIVAJI	<u>Patil</u>	<u>Patil</u>
16	7773	RAUT SIDDHI SHIVAJI	<u>Raut</u>	<u>Raut</u>
17	7774	THORAWADE SHIVRAJ RAMCHANDRA	<u>S.R Thorawade</u>	<u>S.R Thorawade</u>
18	7775	CHOUGALE AYUSH BALAVANT	<u>Chougale</u>	<u>Chougale</u>
19	7776	KAMAT SHRIVEN SANDIP	<u>Shriven</u>	<u>Shriven</u>
20	7777	KUMBHAR GOURI TANAJI	<u>Gemb</u>	<u>Gemb</u>
21	7778	KUMBHAR SIDDHI UDAY	<u>Kumbhar</u>	<u>Kumbhar</u>
22	7779	PATIL AISHWARYA BABASO	<u>Patil</u>	<u>Patil</u>
23	7780	SHINDE ANNADA SURAJ	<u>Shinde</u>	<u>Shinde</u>
24	7781	KIRAMATE SAKSHI SURESH	<u>Sakshik</u>	<u>Sakshik</u>
25	7782	SATARMEKAR NIDA NISARAHAMAD	<u>Satkar</u>	<u>Satkar</u>
26	7993	PATIL RAJWARDHAN Shiram	<u>Patil</u>	<u>Patil</u>
27	7705	GATKWAD PRANALI RAMESH	<u>Pranali</u>	<u>Pranali</u>

Teacher Incharge 1



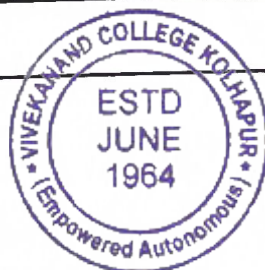
Teacher Incharge 2

Vivekanand College, Kolhapur
(An Empowered Autonomous Institute)

B.Sc. II (SEM-IV) Major Electronics
Internal Exam Attendance Sheet 2025-26

Sr No	Roll No	Student Name	Date: 13/03/2026 02:30 to 04:00 pm	
			2DSC03ELE41	2DSC03ELE42
1	7759	SHINDE SHREEYASH FIROJ	<i>[Signature]</i>	<i>[Signature]</i>
2	7760	KOLI SAMIKSHA SANTOSH	<i>[Signature]</i>	<i>[Signature]</i>
3	7761	SUTAR SHRUTI ANANDA	<i>[Signature]</i>	<i>[Signature]</i>
4	7762	RATHOD LAXMI MACHHINDRA	<i>[Signature]</i>	<i>[Signature]</i>
5	7977	HAVALDAR HARSHA BALASO	<i>[Signature]</i>	<i>[Signature]</i>
6	7986	PATIL AMIT SADASHIV	Ab	Ab
7	7987	KOLI SAMARTH BALASAHEB	<i>[Signature]</i>	<i>[Signature]</i>
8	7988	METHE NIKHIL KRISHNAT	Ab	Ab
9				

[Signature]
Teacher Incharge



Vivekanand College, Kolhapur

(An Empowered Autonomous Institute)

B.Sc. Part- II (Electronics) (Sem-IV)

Internal Examination March 2025-26

DSC-VII: 2DSC03ELE41: Linear Integrated Circuits

Total marks: 10

Q.1) Select most correct alternatives for the following (one mark each)

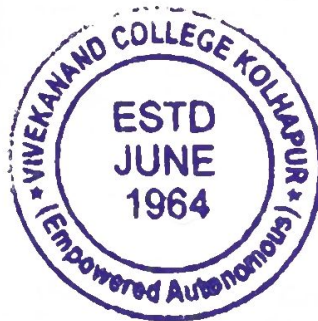
[2 Marks]

1. The input stage of an Op-amp is usually a -----
 - A) differential amplifier
 - B) CE amplifier
 - C) CB amplifier
 - D) CC amplifier
2. An ideal op-amp has ----- output impedance
 - A) $75\ \Omega$
 - B) $0\ \Omega$
 - C) $2M\ \Omega$
 - D) Infinite Ω

Q.2) Attempt any Two (Four marks each)

[8 Marks]

1. Draw the block diagram of an op-amp and explain the function of each block.
2. Draw the circuit diagram of op-amp as a subtractor and write the equation for output voltage.
3. Draw circuit diagram of op-amp in inverting amplifier. Find the expression for its output voltage.



VIVEKANAND COLLEGE, KOLHAPUR

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B.Sc. Part- II (Electronics) (Sem-IV) Internal Examination 25-26

Course Code and Name: DSC03ELE42: Microcontroller 8051 [NEP 2.0]

Day: Friday

Date: 13/3/2026

Time: 1 H

Marks : 10

Q. 1. Select correct alternative (One mark each):

[2]

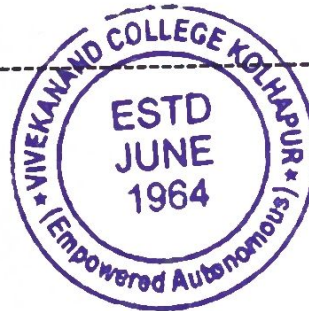
- i. The range of short jump instruction is -----locations.
A) -128 to 127 B) 0 to 255 C) 0 to 2K D) 0 to 65535
- ii. In 8051, number of Timer register/s and its sizes are -----respectively.
A) 1 and 8 B) 2 and 8 C) 8 and 16 D) 2 and 16

Q.3. Attempt any TWO (Four marks each):

[8]

- i. Describe any four Data transfer instructions.
- ii. Mention any 8 features of 8051.
- iii. Explain TCON register of 8051.

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Vivekanand College, Kolhapur

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B.Sc. Part- II (Electronics) (Sem-IV)

Internal Examination March 2025-26

MIN-VII: 2MIN03ELE41: Fundamentals of Operational Amplifier

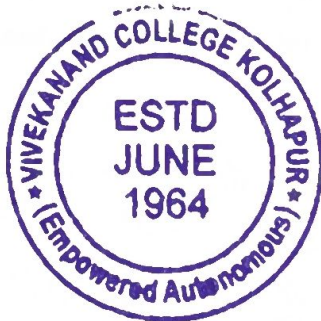
Total marks: 10

Q.1) Select most correct alternatives for the following (one mark each) [2 Marks]

1. An ideal op-amp has _____ input impedance
 - a) $75\ \Omega$
 - b) $0\ \Omega$
 - c) $2M\Omega$
 - d) Infinite Ω
2. The slew rate of op-amp is measured in terms of _____.
 - a) v/ms
 - b) $v/\mu s$
 - c) $\mu s/v$
 - d) $A/sec.$

Q.2) Attempt any Two (Four marks each) [8 Marks]

1. Explain the common mode rejection ratio (CMRR) and slew rate of op-amp.
2. Explain the working of an op-amp as voltage follower with circuit diagram.
3. Draw circuit diagram of op-amp in inverting amplifier. Find the expression for its output voltage.



VIVEKANAND COLLEGE, KOLHAPUR

(AN EMPOWERED AUTONOMOUS INSTITUTE)

B.Sc. Part- II (Electronics) (Sem-IV) Internal Examination 25-26

2MIN03ELE42: 8051 Microcontroller Interfacing and Embedded C [NEP 2.0]

Day: Friday

Time: 1 H

Date: 14/3/2026

Marks : 10

Q. 1. Select correct alternative (One mark each):

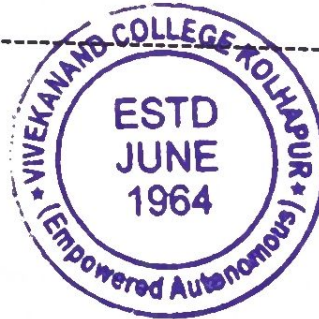
[2]

- i. Data range for unsigned char data type is
A) -32768 to +32767 B) -128 to +127 C) 0 to 65535 D) 0 to 255.
- ii. To send data to LCD, the signal on the pins should be
A) RS=1, R/W=1 B) RS=1, R/W=0 C) RS=0, R/W=1 D) RS=0, R/W=0

Q.3. Attempt any TWO (Four marks each):

[8]

- i. Write an 8051-C to generate a square wave on port P1 using timer delay.
- ii. Draw an interfacing diagram of LED with 8051. Write 8051-C program to blink single LED with 1 sec ON and 1 sec OFF time period continuously.
- iii. Interface single seven segment display with 8051 and write 8051-C program to display the digits 0 to 9 continuously.



Name :- shree yash vijay shinde

(अधिकारपदत्त स्वायत्त)
कोल्हापूर**VIVEKANAND COLLEGE, KOLHAPUR.**
(Empowered Autonomous)**SUPPLIMENT**BSc. C. part - II Electronics -
OSC - V : 2DSC03EL E41: Linear
integrated circuits

॥ ज्ञान, विज्ञान आणि सुसंस्कार यासाठी शिक्षण प्रसार ॥

- शिक्षणमहर्षी डॉ. बापूजी साळुंखे

6/10

Jr. Supervisor's Sign. :

Students Sign. :

Seat No. : ~~7799~~ 7769

Seat No. in words : Seven Seven Five nine

Suppliment No. :

38115

Centre V.C.K

प्र. क्र.

Q. No.

Q.1

Q. The input stage of an op-amp is usually a
→ (A) differential amplifier

(अधिकारपदत्त स्वायत्त)

कोल्हापूर

2) An ideal op-amp has output impedance

→ (B) 0 Ω 

02

Section

Q. No.

Marks

प्र. क्र.
Q. No.

Q2)

1)

→

Input signal

Immediate signal
StageLevel Shifting
StageOutput
StageInput Stage

The input stage is first stage of op-amp.
It is usually differential amplifier.

कोल्हापूर

Immediate Stage

the op-amp is the second stage of

Level Shifting Stage

the Level Shifting stage third stage of op-amp

Output Stage

The output stage is last stage of op-amp. The output stage provides the low output impedance.



क्र. No.

22)

3)

→ The op-amp differential amplifiers
when v_2 is grounded the op-amp is inverting

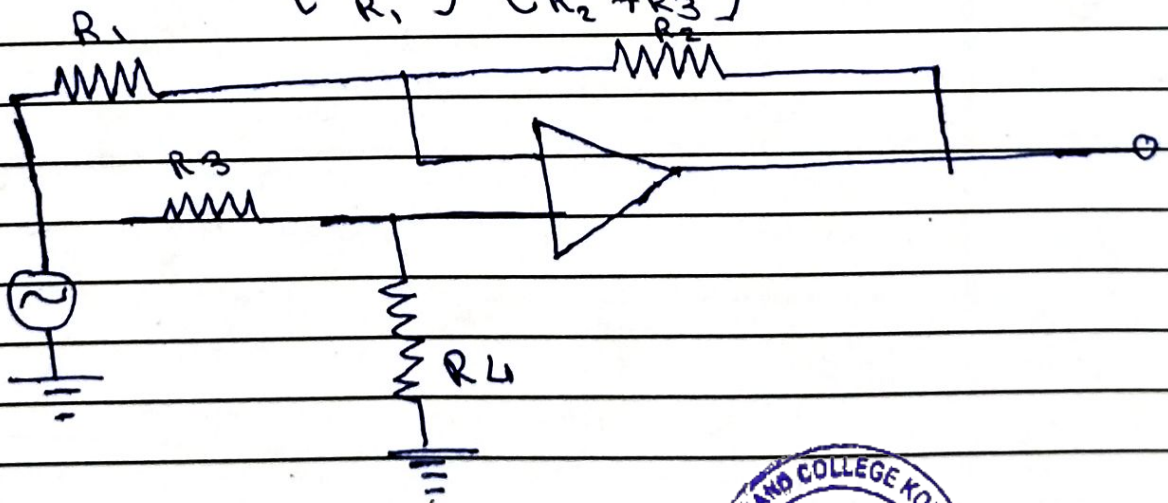
$$V_o = \left(1 + \frac{R_F}{R_1}\right) V_1 \text{ ----- (1)}$$

similarly v_1 is grounded then the op-amp is non inverting

$$V_o = 1 + \frac{R_F}{R_1} V_o$$

कोल्हापूर

$$= \left(-\frac{R_F}{R_1}\right) \left(\frac{R_3}{R_2 + R_3}\right) V_2 \text{ ----- (2)}$$



using superposition rule

Name :- Shreyash Firoj Shinde



(अधिकारप्रदत्त स्वायत्त)
कोल्हापूर

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- शिक्षणमहर्षी डॉ. बापूजी साळुंखे

6/10/21

VIVEKANAND COLLEGE, KOLHAPUR.
(Empowered Autonomous)

SUPPLIMENT

BS.C - Part - II Electronics
Course Code and name: DSC03ELE42
micro controller 8051

Jr. Supervisor's Sign. :

Students Sign. :

Seat No. : ~~7759~~ 7759

Seat No. in words : Seven ~~five~~ nine

Suppliment No. :

38116

Centre : V.C.15

प्र. क्र.
Q. No.

Q1)

1) The range of short jump instruction is locations

→ (A) - 128 to 127

(अधिकारप्रदत्त स्वायत्त)

कोल्हापूर

2) In 8051, number of timer register/s. and its sizes are respectively

→ (D) 2 and 16



~~Q2) Attempt any two~~

~~Q3) Describe any four transfer instructions~~

~~Q4) Data transfer in the 8051 are used to move data between registers memory~~

Samarth B. Koli

Sem: IV



(अधिकारपद्धत स्वायत्त)
कोल्हापूर

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- शिक्षणमहर्षी डॉ. बापूजी साळुंखे

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VIVEKANAND COLLEGE, KOLHAPUR.
(Empowered Autonomous)

SUPPLIMENT

Jr. Supervisor's Sign. :

Students Sign. : S.B. Koli

Seat No. : 7987

Seat No. in words :

Suppliment No. :

38108

Centre Vck

प्र. क्र.
Q. No.

Linear Integrated circuits

Q.1 1) The input stage of an op-amp is usually a differential amplifier

Ans: A) differential amplifier

(अधिकारपद्धत स्वायत्त)

कोल्हापूर

2) An ideal op-amp has 0Ω output impedance.

Ans: B) 0Ω





॥ ज्ञान, विज्ञान आणि सुसंस्कार यांसाठी शिक्षण प्रसार ॥

- शिक्षणमहर्षी डॉ. बापूजी साळुंखे

VIVEKANAND COLLEGE, KOLHAPUR

(An Empowered Autonomous Institute)

Assignment

Student's Sign : S.B. Koli

Seat No./ Roll No. : 7987

Seat No./ Roll No.
In words

Seven nine Eight seven

06611

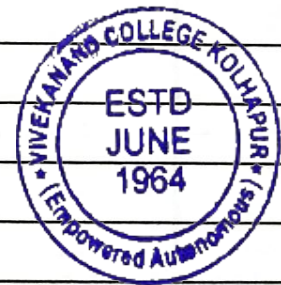
Microcontroller 8051

i) The range of short jump instruction is -128 to 127 locations.

Ans: A) -128 to 127

ii) In 8051, number of Timer registers and its size are 2 and 16 respectively.

Ans: D) 2 and 16



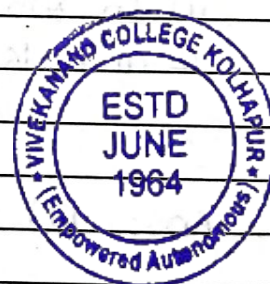
[illegible]

प्र. क्र.
Q. No.

Q.2 ii) The 8051 microcontroller is an 8-bit processor featuring 4kB-chip ROM, 128 bytes RAM 32 lines and two 16-times bit.

Feature :

- ① 8-bit CPU
- ② 4 KB on-chip RAM
- ③ 128 bytes on-chip RAM
- ④ 32 I/O lines
- ⑤ Two 16-bit timers
- ⑥ Full Duplex UART
- ⑦ Five interrupt sources
- ⑧ 16-bit program counter (PC)



Kiramate Sakshi



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- शिक्षणमहर्षी डॉ. बापूजी साळुंखे

VIVEKANAND COLLEGE, KOLHAPUR

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Assignment

Student's Sign : Sakshi

Seat No./ Roll No. : 7781

Seat No./ Roll No. seven seven
In words eight one

11353

Fundamentals of Operational Amplifier

प्र. क्र.
Q. No.

Q.1] An ideal op-amp has input impedance :

a] Infinite ∞

Q.2] The slew rate of op-amp is measured in terms of

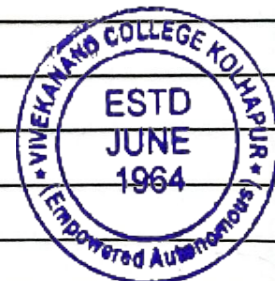
b] V/MS

Q.2]

a] common mode rejection ratio (CMRR) and slew rate of op-amp.

- common mode refers to the situation when the same differential amplifiers connected to the inverting to non-inverting terminals.

- It has ability to reject all common mode signals.



02

Section

Q. No.

Marks

प्र. क्र.

Q. No.

- Mathematically

$$CMRR = |AD - A|$$

where :- AD = Differential amplifier
A = common gain

- The common mode ideal is ∞
- It reject all common mode signal

2] Slew rate :-

$$S = dv_o / dt \quad - \text{expression}$$

- The slew rate of common mode op-amp is measured in terms.

- The slew rate is maximum change of output of input process





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- शिक्षणमहर्षी डॉ. बापूजी साळुंखे

2/10
04/10
41

VIVEKANAND COLLEGE, KOLHAPUR

(An Empowered Autonomous Institute)

Assignment

Student's Sign : Sakshi.k

Seat No./ Roll No. : 7781

Seat No./ Roll No. seven seven
In words eight one

11351

8051 Microcontroller

प्र. क्र.
Q. No.

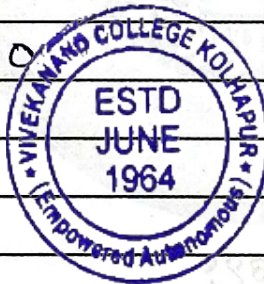
Q.1]

i] Data range for unsigned char data types is

d] 0 to 255

ii] To send data to LCD, the signal on the pins should be

B] RS=1, R/W=0



02

Section

Q. No.

Marks

प्र. क्र.

Q. No.

Q.2]

III]

Interface single seven segment display with 8051 and write 8051-c program to display the digit 0 to 9 continuously

```
#include <reg 51.h>
```

```
unsigned int seg_code [10] - for
```

