

Shri Swami Vivekanand Shikshan Sanstha's

VIVEKANAND COLLEGE, KOLHAPUR

(AN EMPOWERED AUTONOMOUS INSTITUTE)

Department of Electronics

Unit Test 1 for B.Sc. I

Paper I: Analog Electronics I (3DSC03ELE11)

Topic: Basic Circuit Elements

Date: Friday, 11/09/2026

**Shri Swami Vivekanand Shikshan Sanstha's
VIVEKANAND COLLEGE, KOLHAPUR
(AN EMPOWERED AUTONOMOUS INSTITUTE)**



Department of Electronics

Unit Test I

B.Sc. I

Notice

Date 05/09/2026

All the students of above class are hereby informed that, their 20 marks unit tests of topic I of Paper I and Paper II are scheduled on following dates. Kindly take a note and attend the same without fail.

Sr. No.	Paper No	Course Name and Code	Name of the Topic	Day and Date	Time
1	II	Digital Electronics I (3DSC03ELE12)	Number System, Binary codes and Binary Arithmetics	Thursday, 10/09/2026	1.10pm to 2.00pm
2	I	Analog Electronics I (3DSC03ELE11)	Basic Circuit Elements	Friday, 11/09/2026	1.10pm to 2.00pm


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

Question Paper Pattern

Q.1 Select the correct alternatives (4 Marks)

1 -----

2 -----

3 -----

4 -----

Q.2 Attempt any one of the following (8 Marks)

1

2

Q.3 Attempt any two of the following (8 Marks)

1

2

3

4

Shri Swami Vivekanand Shikshan Sanstha's
Vivekanand College, Kolhapur
(An Empowered Autonomous Institute)

Unit Test-I

Course Code and Name: 3DSC03ELE11: Analog Electronics-I

Time: 1.10 pm to 02:00 pm

Date: 11/09/2026

Marks: 20

Q.1. Select the correct alternatives

[4M]

1. _____ is a passive element.
a) Resistor b) Diode c) FET d) Transistor
2. For a capacitor, the relation between charge, voltage and capacitance is _____.
a) $C=QV$ b) $Q=CV$ c) $V=QC$ d) None of these
3. The working principle of transformer is based on _____.
a) Self-inductance b) Mutual Inductance
c) Resistance d) None of these
4. In Isolation transformer, the turn's ratio is _____.
a) >1 b) <1 c) $=1$ d) None of these

Q.2. Attempt any ONE or the following (8 Marks each)

[8 M]

1. Give the classification of resistors and explain construction of carbon composition resistor.
2. Give the working principle of transformer. Explain Step up and step down transformer in detail.

Q.3. Attempt any TWO or the following (4 Marks each)

[8 M]

1. Find the resistance value of following colour codes.
a) Yellow, Violet, Red, Gold b) Brown, Black, Orange, Gold
c) Orange, Orange, Red, Silver d) Red, Red, Brown, Silver
2. Write a short note on capacitor.
3. Write a short note on Inductor.

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Department of Electronics
 B.Sc. I (NEP 3.0) Unit Test I : Attendance Sheet

Paper I : Analog Electronics I

Sr No	Roll No	G en	Student Name	Subject Group	Analog Electronics I (3DSC03ELE11) 11/9/2026
1	7201		ADAKE PRANAV SUKUMAR	PCE	AB
2	7202	*	BAGWAN KHANSA ASHPAK	PCE	AB
3	7203		BAMANIKAR HARSHAWARDHAN ANIL	PCE	AB
4	7204		BENAKE PRITHVIRAJ RAJESH	PCE	AB
5	7205		BHISE KUNAL AMAR	PCE	AB
6	7206	*	BHOI SAMARUDDHI SAMPAT	PCE	AB
7	7207	*	BHOSALE RIYA AMAR	PCE	Riya
8	7208		BHOSALE SANSKAR BAJIRAO	PCE	AB
9	7209	*	BIDKAR SAE SHIRISH	PCE	Saibidkar
10	7211		CHAVAN TANISHQ YUVRAJ	PCE	AB
11	7212		DAVARE RAJ SURESH	PCE	AB
12	7213		DHALE SIDDHARTH SUHAS	PCE	Suhas
13	7214		GAWADE GOVIND BABURAO	PCE	AB
14	7215	*	GHORPADE RASIKA RAJENDRA	PCE	Rasika
15	7216		GURAV VEDANT PRAVIN	PCE	AB
16	7217	*	HAJARE APEKSHA SHIVAJI	PCE	AH
17	7218		INGALE PURVA MAHESH	PCE	AB
18	7219	*	KAMANNA POURNIMA RAYGONDA	PCE	P.R.K
19	7220		KAMBLE ABHISHEK TUKARAM	PCE	AB
20	7221		KAMBLE ALOK AKSHAY	PCE	AB
21	7222	*	KAMBLE ANJALI ARUN	PCE	Anjali
22	7223		KAMBLE HARSH MILIND	PCE	Harsh
23	7224		KAMBLE VEDANT DEEPAK	PCE	AB
24	7225	*	KASBE SIYONA PRAVIN	PCE	AB

Sr No	Roll No	Gen	Student Name	Subject Group	Analog Electronics I (3DSC03ELE11)
					11/9/2026
25	7226		KOLI SANDIP DILIP	CsME	Sdkoli
26	7227	*	KOTHALE ARATI VIDYASAGAR	PCE	A-B
27	7228		KSHIRSAGAR JAYESH MOHAN	PCE	Jksagar
28	7229	*	KUMBHAR SNEHA SACHIN	PCE	A-B
29	7230		KURANE SHUBHAM SURESH	PCE	D.
30	7231		MAJGAONKAR PARTH SANJAY	PCE	A-B
31	7232		MAKANDAR AFTAB JAMALDIN	PCE	A-B
32	7233		MALAGE MANAS ARUN	PCE	Manulga
33	7234		MANE SAIRAJ AMOL	PCE	A-B
34	7235	*	MITAKE BHAKTI SATISH	PCE	Bmitake
35	7236	*	MORE RIYA PRAKASH	PCE	A-B
36	7237		MUJAWAR MAHAMADSAAD SHAKIL	PCE	Shakilmujawar
37	7238		MUJAWAR NAVAJ AKRAM	PCE	NAVAJ
38	7239		MUJAWAR RIJWAN RIYAJ	PCE	Rijwan
39	7240		PARULEKAR JAY UMESH	PCE	Parulekar
40	7241		PARVATGOSAVI SHRENIK MAHESH	PCE	A-B
41	7242		PATIL DARSHANA SUMIT	PCE	A-B
42	7243		PATIL HARDIK SUBHASH	PCE	A-B
43	7244		PATIL OMKAR SANDIP	PCE	A-B
44	7245	*	PATIL SANCHITA SUBHASH	PCE	Sanchita
45	7246		PATIL SHREYASH EKNATH	PCE	Shreyash
46	7247	*	PATOLE VEDIKA SUBHASHCHANDRA	PCE	Vedika
47	7248		PAWAR Koustubh Haridas	PCE	Koustubh
48	7249		SHINDE PRAKASH SHAMRAO	PCE	A-B
49	7250	*	SHINDE SHUBHADA PAVAN	PCE	Shinde
50	7251		SIDDHANURLE SAMARTH DHANAJI	PCE	A-B
51	7252		SWAMI HARSHAL SANDEEP	PCE	A-B
52	7253		TODKAR OM AMAR	PCE	Om

Sr No	Roll No	Gen	Student Name	Subject Group	Analog Electronics I (3DSC03ELE11) 11/9/2026
53	7295		MHAKAVE HARSHAD SANJAY	PCE	AB
54	7314		ATHAVALA CLARUS DHIRAJ	CsES	Clarus
55	7315		DHOLE SHIVRAJ BAJIRAO	CsES	AB
56	7316		JADHAV KASBEKAR ISHAN CHANDRASHEKHAR	CsES	AB
57	7317	*	JADHAV PRANALI YUVARAJ	CsES	Pranali
58	7318	*	KHEDKAR VAIBHAVI PRADIP	CsES	VRK
59	7319	*	KOTHAWALE NIDHI ANIL	CsES	NKothawale
60	7320		PATHARVAT SAKSHAM VITTHAL	CsES	AB
61	7321	*	PATIL AARATI DHANAJI	CsES	Patil
62	7322	*	PATIL ARUNDHATI ANIL	CsES	AB
63	7323	*	PATIL SHRADDHA KRISHNAT	CsES	AB
64	7324	*	SAWANT JINAL PRALHAD	CsES	Sawant
65	7325	*	SHINDE ANKITA POPAT	CsES	Shinde
66	7326	*	SURYAWANSHI SAMIKSHA JOTIRAM	CsES	AB
67	7327	*	TANVI SHITAL GIRI	CsES	Tanvi Giriraj
68	7329		BHARMAL RUSHIKESH PRAKASH	CsME	AB
69	7330	*	BUCHADE SAKSHI VIJAY	CsES	Buchade
70	7331	*	GAVADE SIMRAN DAJI	CsME	AB
71	7332	*	JADHAV SHREYA SARJERAO	CsES	Shreya
72	7333	*	KAMBLE AKSHARA AMAR	CsME	Kamble
73	7334	*	KAMBLE SAMRUDDHI SURESH	CsME	Kamble
74	7335		KAMBLE SIDDHARTH PRAKASH	CsME	AB
75	7336		KAMBLE TANMAY SANDEEP	CsME	AB
76	7337	*	KATKAR HARSHADA SANTOSH	CsME	AB
77	7338		KESARKAR OMKAR PANDURANG	CsME	AB
78	7339		KHAN ALIHUSSEN GULAMALI	CsME	AB
79	7340	*	LOLE SANCHITA SACHIN	CsME	AB
80	7341		MALANDKAR ATHARV VIDYADHAR	CsME	Adarsh

Sr No	Roll No	Gen	Student Name	Subject Group	Analog Electronics I (3DSC03ELE11)
					11/9/2026
81	7342	*	MANE MADHURA SANDIP	CsME	<i>Mane</i>
82	7343		MITHARI VARAD VINOD	CsME	<i>Mithari</i>
83	7344	*	MUDGAL SHRAVANI CHANDRAKANT	CsME	AB
84	7345	*	PATIL ANKITA SAGAR	CsME	AB
85	7346		PATIL ATHARV MANIKARAV	CsME	<i>AmPatil</i>
86	7347	*	PATIL SAGRIKA ASHOK	CsME	<i>Sagrika</i>
87	7348	*	PATIL SHREYA SATAPPA	CsME	AB
88	7349		PATIL VIRAJ SANGRAM	CsME	AB
89	7350		SHINDE SAIRAJ SACHIN	CsME	<i>Sairaj</i>
90	7351		SHINDE SIDDHESH SANDIP	CsME	<i>Sinde</i>
91	7352		SUTAR KUNAL VIKAS	CsME	AB
92	7353		VANJIRE SIDDHARTH SUDHIR	CsME	<i>Vanjire</i>
93	7354		VARUTE SAMARTH SARDAR	CsME	<i>Varute</i>
94	7370		NARUTE MANGESH SANTOSH	CsES	AB
95	7371	*	NIUNGARE SAMIKSHA NETAJI	CsES	<i>Niungare</i>
96	7373		PATIL VIRAJ PRAMOD	CsES	AB
97	7528		JADHAV PARTH PRAKASH	PCE	AB
98	7537		PATIL OMKAR SHIVAJI	PCE	<i>Patil</i>
99	7539		KUMBHAR ADITYA DATTATRAY	PCE	AB
100	7541		POWAR PRUTHVIRAJ CHANDRAKANT	PCE	<i>Powar</i>
101	7543		PATIL SOHAN UMAJI	PCE	AB
102	7554		LOHAR SUTAR SHASHANK SANTOSH	PCE	AB
103	7555		PATIL ADITYA SACHIN	PCE	<i>Patil</i>
104	7557		GHOSALKAR ADITYA KIRAN	PCE	AB
105	7558		SHAIKH RIHAN RAJU	PCE	AB
106	7559		MESE HARSHVARDHAN MAHASIDDH	CsES	AB
107	7560		MALI VIVEK LAXMAN	PCE	AB
108	7561		SAWANT DHAIRYASHEEL SARJERAO	PCE	<i>Sawant</i>

Sr No	Roll No	Gen	Student Name	Subject Group	Analog Electronics I (3DSC03ELE11) 11/9/2026
109	7562	*	WANDRE JANHAVI RANJIT	PCE	<i>R. S. Chavhan</i>
110	7564		REVANDKAR ATHARV MAHESH	PCE	<i>A. B. Chavhan</i>
111	7565		KUMBHAR SUNNY RAJARAM	PCE	<i>A. B. Chavhan</i>
112	7566		PATIL ADITYA MAHAVIR	CSES	A-B
113	7571		Khemalapure Avaddhoot Balaji	PCE	<i>ABKhemalapure</i>
114					

Teacher Incharge :

(Dr. S. V. Kulkarni)

Shri Swami Vivekanand Shikshan Sanstha's
VIVEKANAND COLLEGE, KOLHAPUR
 (An Empowered Autonomous Institute)
 Department of Electronics
 B.Sc. I (NEP 3.0) Unit Test I : Marks Sheet
 Paper I : Analog Electronics I (3DSC03ELE11)

Sr No	Roll No	G en	Student Name	Subject Group	Marks Obtained (20)
					11/9/2026
1	7201		ADAKE PRANAV SUKUMAR	PCE	AB
2	7202	*	BAGWAN KHANSA ASHPAK	PCE	AB
3	7203		BAMANIKAR HARSHAWARDHAN ANIL	PCE	AB
4	7204		BENAKE PRITHVIRAJ RAJESH	PCE	AB
5	7205		BHISE KUNAL AMAR	PCE	AB
6	7206	*	BHOI SAMARUDDHI SAMPAT	PCE	12
7	7207	*	BHOSALE RIYA AMAR	PCE	9
8	7208		BHOSALE SANSKAR BAJIRAO	PCE	10
9	7209	*	BIDKAR SAEER SHIRISH	PCE	8
10	7211		CHAVAN TANISHQ YUVRAJ	PCE	AB
11	7212		DAVARE RAJ SURESH	PCE	AB
12	7213		DHALE SIDDHARTH SUHAS	PCE	10
13	7214		GAWADE GOVIND BABURAO	PCE	AB
14	7215	*	GHORPADE RASIKA RAJENDRA	PCE	14
15	7216		GURAV VEDANT PRAVIN	PCE	AB
16	7217	*	HAJARE APEKSHA SHIVAJI	PCE	13
17	7218		INGALE PURVA MAHESH	PCE	AB
18	7219	*	KAMANNA POURNIMA RAYGONDA	PCE	11
19	7220		KAMBLE ABHISHEK TUKARAM	PCE	AB
20	7221		KAMBLE ALOK AKSHAY	PCE	AB
21	7222	*	KAMBLE ANJALI ARUN	PCE	19
22	7223		KAMBLE HARSH MILIND	PCE	10
23	7224		KAMBLE VEDANT DEEPAK	PCE	AB
24	7225	*	KASBE SIYONA PRAVIN	PCE	AB



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27	7228		KSHIRSAGAR JAYESH MOHAN	PCE	8
28	7229	*	KUMBHAR SNEHA SACHIN	PCE	AB
29	7230		KURANE SHUBHAM SURESH	PCE	10
30	7231		MAJGAONKAR PARTH SANJAY	PCE	AB
31	7232		MAKANDAR AFTAB JAMALDIN	PCE	AB
32	7233		MALAGE MANAS ARUN	PCE	10
33	7234		MANE SAIRAJ AMOL	PCE	AB
34	7235	*	MITAKE BHAKTI SATISH	PCE	11
35	7236	*	MORE RIYA PRAKASH	PCE	AB
36	7237		MUJAWAR MAHAMADSAAD SHAKIL	PCE	7
37	7238		MUJAWAR NAVAJ AKRAM	PCE	AB
38	7239		MUJAWAR RIJWAN RIYAJ	PCE	9
39	7240		PARULEKAR JAY UMESH	PCE	14
40	7241		PARVATGOSAVI SHRENIK MAHESH	PCE	AB
41	7242		PATIL DARSHANA SUMIT	PCE	AB
42	7243		PATIL HARDIK SUBHASH	PCE	AB
43	7244		PATIL OMKAR SANDIP	PCE	AB
44	7245	*	PATIL SANCHITA SUBHASH	PCE	4
45	7246		PATIL SHREYASH EKNATH	PCE	10
46	7247	*	PATOLE VEDIKA SUBHASHCHANDRA	PCE	3
47	7248		PAWAR KOUSTUBH HARIDAS	PCE	12
48	7249		SHINDE PRAKASH SHAMRAO	PCE	AB
49	7250	*	SHINDE SHUBHADA PAVAN	PCE	9
50	7251		SIDDHANURLE SAMARTH DHANAJI	PCE	AB
51	7252		SWAMI HARSHAL SANDEEP	PCE	AB
52	7253		TODKAR OM AMAR	PCE	13



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55	7315		DHOLE SHIVRAJ BAJIRAO	CsES	AB
56	7316		JADHAV KASBEKAR ISHAN CHANDRASHEKHAR	CsES	AB
57	7317	*	JADHAV PRANALI YUVARAJ	CsES	19
58	7318	*	KHEDKAR VAIBHAVI PRADIP	CsES	17
59	7319	*	KOTHAWALE NIDHI ANIL	CsES	18
60	7320		PATHARVAT SAKSHAM VITTHAL	CsES	AB
61	7321	*	PATIL AARATI DHANAJI	CsES	19
62	7322	*	PATIL ARUNDHATI ANIL	CsES	AB
63	7323	*	PATIL SHRADDHA KRISHNAT	CsES	AB
64	7324	*	SAWANT JINAL PRALHAD	CsES	13
65	7325	*	SHINDE ANKITA POPAT	CsES	18
66	7326	*	SURYAWANSHI SAMIKSHA JOTIRAM	CsES	AB
67	7327	*	TANVI SHITAL GIRI	CsES	AB
68	7329		BHARMAL RUSHIKESH PRAKASH	CsME	AB
69	7330	*	BUCHADE SAKSHI VIJAY	CsES	18
70	7331	*	GAVADE SIMRAN DAJI	CsME	AB
71	7332	*	JADHAV SHREYA SARJERAO	CsES	13
72	7333	*	KAMBLE AKSHARA AMAR	CsME	4
73	7334	*	KAMBLE SAMRUDDHI SURESH	CsME	16
74	7335		KAMBLE SIDDHARTH PRAKASH	CsME	AB
75	7336		KAMBLE TANMAY SANDEEP	CsME	AB
76	7337	*	KATKAR HARSHADA SANTOSH	CsME	15
77	7338		KESARKAR OMKAR PANDURANG	CsME	AB
78	7339		KHAN ALIHUSSEN GULAMALI	CsME	AB
79	7340	*	LOLE SANCHITA SACHIN	CsME	AB
80	7341		MALANDKAR ATHARV VIDYADHAR	CsME	7



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81	7342	*	MANE MADHURA SANDIP	CsME	11
82	7343		MITHARI VARAD VINOD	CsME	7
83	7344	*	MUDGAL SHRAVANI CHANDRAKANT	CsME	AB
84	7345	*	PATIL ANKITA SAGAR	CsME	AB
85	7346		PATIL ATHARV MANIKARAV	CsME	10
86	7347	*	PATIL SAGRIKA ASHOK	CsME	7
87	7348	*	PATIL SHREYA SATAPPA	CsME	AB
88	7349		PATIL VIRAJ SANGRAM	CsME	AB
89	7350		SHINDE SAIRAJ SACHIN	CsME	7
90	7351		SHINDE SIDDHESH SANDIP	CsME	8
91	7352		SUTAR KUNAL VIKAS	CsME	AB
92	7353		VANJIRE SIDDHARTH SUDHIR	CsME	7
93	7354		VARUTE SAMARTH SARDAR	CsME	8
94	7370		NARUTE MANGESH SANTOSH	CsES	AB
95	7371	*	NIUNGARE SAMIKSHA NETAJI	CsES	10
96	7373		PATIL VIRAJ PRAMOD	CsES	AB
97	7528		JADHAV PARTH PRAKASH	PCE	AB
98	7537		PATIL OMKAR SHIVAJI	PCE	8
99	7539		KUMBHAR ADITYA DATTATRAY	PCE	AB
100	7541		POWAR PRUTHVIRAJ CHANDRAKANT	PCE	10
101	7543		PATIL SOHAN UMAJI	PCE	AB
102	7554		LOHAR SUTAR SHASHANK SANTOSH	PCE	AB
103	7555		PATIL ADITYA SACHIN	PCE	12
104	7557		GHOSALKAR ADITYA KIRAN	PCE	AB
105	7558		SHAIKH RIHAN RAJU	PCE	AB
106	7559		MESE HARSHVARDHAN MAHASIDDH	CsES	AB
107	7560		MALI VIVEK LAXMAN	PCE	AB
108	7561		SAWANT DHAIRYASHEEL SARJERAO	PCE	8



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110	7564		REVANDKAR ATHARV MAHESH	PCE	10
111	7565		KUMBHAR SUNNY RAJARAM	PCE	16
112	7566		PATIL ADITYA MAHAVIR	CsES	AB
113	7571		KHEMALAPURE AVADDHOOT BALAJI	PCE	7
114					

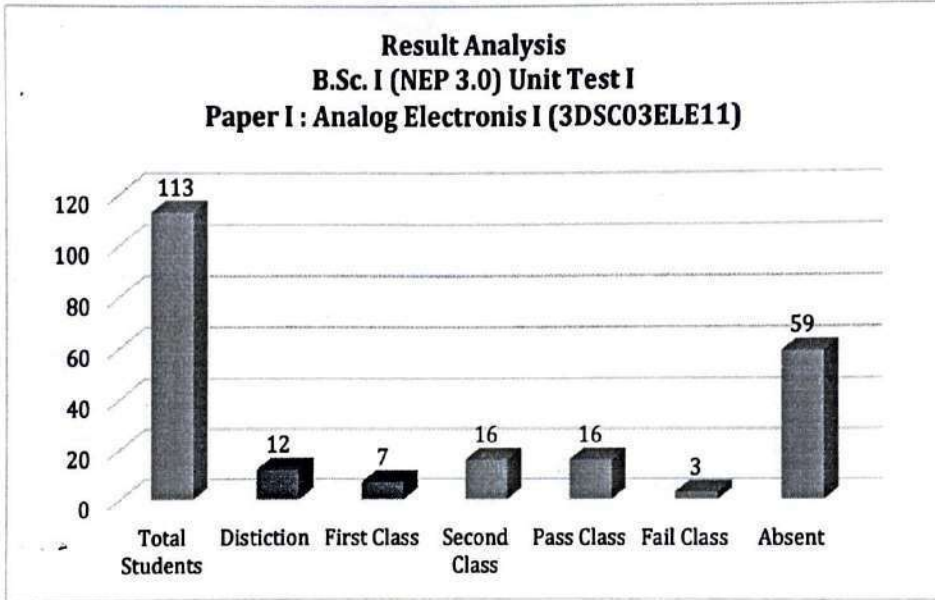

(Dr. S. V. Kulkarni)
Teacher Incharge


(Dr. C. B. Patil)
HEAD
DEPARTMENT OF ELECTRONICS
VIVEKANAND COLLEGE, KOLHAPUR
(EMPOWERED AUTONOMOUS)



Result Analysis

	Total Students	Distiction	First Class	Second Class	Pass Class	Fail Class	Absent	Passing Percentage
Total Students	113	12	7	16	16	3	59	94.44%
Percentage	100	22.22	12.96	29.62	29.62	5.5	52.21	




(Dr. S. V. Kulkarni)
Teacher Incharge


(Dr. C. B. Patil)
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VIVEKANAND COLLEGE, KOLHAPUR
(EMPOWERED AUTONOMOUS)





(अधिकारप्रदत्त स्वायत्त)
कोल्हापूर

VIVEKANAND COLLEGE, KOLHAPUR.
(Empowered Autonomous)

SUPPLIMENT

॥ ज्ञान, विज्ञान आणि सुसस्कार यासाठी शिक्षण प्रसार ॥

- शिक्षणमहर्षी डॉ. बापूजी साबुंखे

Jr. Supervisor's Sign. :

Students Sign. : Amble

Seat No. : 7222

Seat No. in words : seven thousand two hundred and twenty two

Suppliment No. :

6998

Centre

19
20

प्र. क्र.
Q. No.

Q. 1)

01 1) ~~a]~~ Resistor.

01 2) ~~b]~~ $Q = CV$.

01 3) ~~b]~~ Mutual Inductance

01 4) ~~a]~~ $\epsilon = 1$

प्र. क्र.

Q. No.

Q. 2]

1] resistor is a passive component in circuit which provides resistance to the flow of current.

i) resistance is also measured in ohm, the greek symbol omega (Ω).

ii) resistors are linear and non-linear in nature.

iii) linear resistor obey ohm's law & non-linear resistor does not obey ohm's law.

classification of the resistors.

1] Fixed resistors

i] linear resistor

linear resistors are of 3 types.

i) carbon composition resistor.

ii) film resistor

iii) wire-wound resistor.

2] Variable

Q.2)

1) ii] non-linear resistor
non-linear resistors are of 3 types.

- i) Thermistor (temperature dependant resistor).
- ii) LDR (light dependant resistor).
- iii) Varistor (voltage dependant resistor).

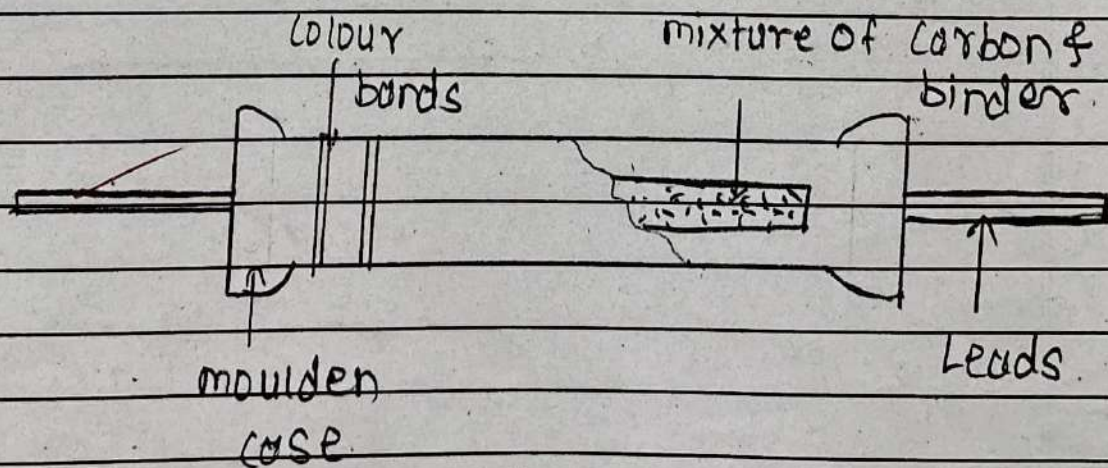
2] variable resistors

- i) potentiometer. (Pot)
- ii) Rheostat
- iii) preset.

(अधिकारपदस्त स्वायत्त)

कोल्हापुर

Construction of carbon composition resistor.



प्र. क्र.

Q. No.

Q. 2)

- i) Carbon composition resistor is made up of the mixture of carbon and/or graphite powder and a non-conducting ceramic mixture to bind it all together.
- ii) The carbon composition resistor is low to medium type of power resistor.
- iii) The carbon composition resistor with power ratings from $1/8$, $1/4$, $1/2$, 1 and 2 watts and typical tolerance range $\pm 5\%$, $\pm 10\%$, $\pm 20\%$.
- iv) The resistor is available in the resistance value. 1Ω to $22M\Omega$.



॥ ज्ञान, विज्ञान आणि सुसंस्कार यांसाठी शिक्षण प्रसार ॥

- शिक्षणमहर्षी डॉ. बापूजी साळुंखे

VIVEKANAND COLLEGE, KOLHAPUR

(An Empowered Autonomous Institute)

Assignment

Student's Sign : Starbly.

Seat No./ Roll No. : 7222

Seat No./ Roll No.
In words

①

17158

प्र. क्र.

Q. No.

Q.3)

1. a] Yellow, Violet, Red, Gold.

$$\begin{aligned} &= 47 \times 10^2 \pm 5\% \\ &= 4700 \pm 5\% \\ &= 47 \text{ k}\Omega \pm 5\% \end{aligned}$$

b] Brown, Black, Orange, Gold.

$$\begin{aligned} &= 10 \times 10^3 \pm 5\% \\ &= 10000 \pm 5\% \\ &= 10 \text{ k}\Omega \pm 5\% \end{aligned}$$

c] Orange, Orange, Red, Silver.

$$= 33 \times 10^2 \pm 10\%$$

प्र. क्र.

Q. No.

Q. 3)

1)

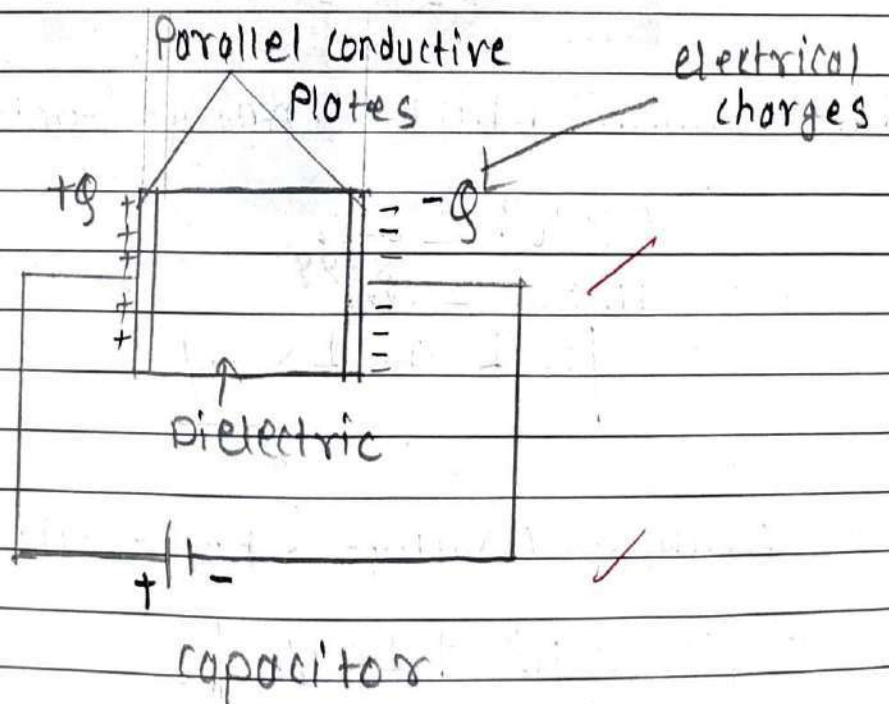
82111

d) Red, Red, Brown Silver.

$$= 22 \times 10^1 \pm 10\%$$

$$= [220 \pm 10\%]$$

- 2) i) Capacitor is the passive component which has the 'capacity' or 'ability' to store energy in the form of an electrical energy to produce potential difference across its plates.

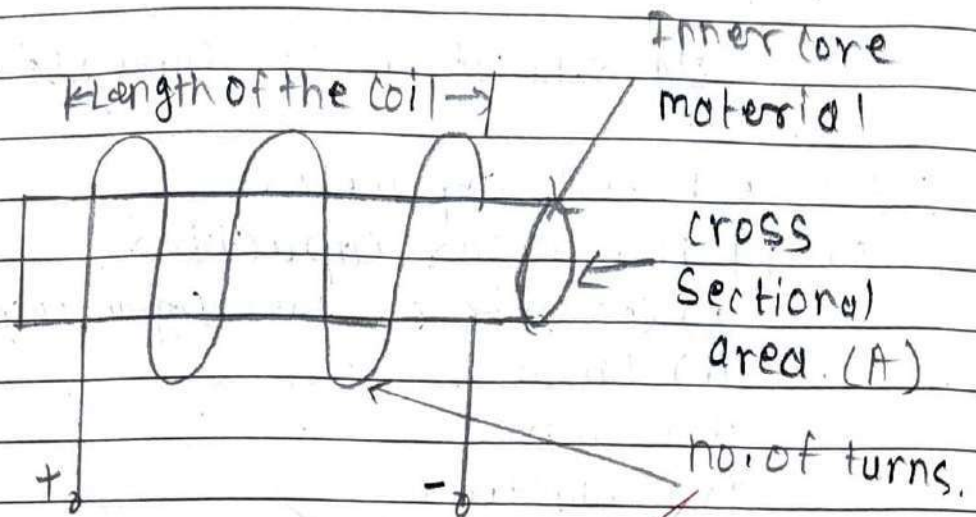


प्र. क्र.

Q. No.

Q. 3)

3)



* Inductor *

Q. The Inductor has three types:

- i) Air-core Inductor
- ii) Iron-core Inductor
- iii) Ferrite-core Inductor.

The unit of Inductor is Henry (H).

$$V_L(t) = -L \cdot \frac{di}{dt}$$



॥ ज्ञान, विज्ञान आणि सुसंस्कार यांसाठी शिक्षण प्रसार ॥

- शिक्षणमहर्षी डॉ. बापूजी साबुंबे

VIVEKANAND COLLEGE, KOLHAPUR

(An Empowered Autonomous Institute)

Assignment

Student's Sign : DM

Seat No./ Roll No. : 7317.

Seat No./ Roll No.
In words

06270

19
20
21

Unit test I.

Course name : Analog Electronics.

प्र. क्र.

Q. No.

Q.1) 1) ----- is a passive element.

→ a) Resistor.

2) For capacitor, the relation between charge, voltage and Capacitance is

→ b) $q = cv$.

Oh 3) The working principle of transformer is based on

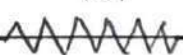
→ b) Mutual Inductance.

4) In isolation transformer, then turn's ratio is.

→ c) = 1.

Q.2) Give the classification of resistors of explain construction of carbon composition resistor.

→ Resistor is oppose flow of current. The unit of resistor is Ω (in Greek omega). The symbol of resistor is given by,

R.

Symbol.

02

Section

Q. No.

Marks

प्र. क्र.

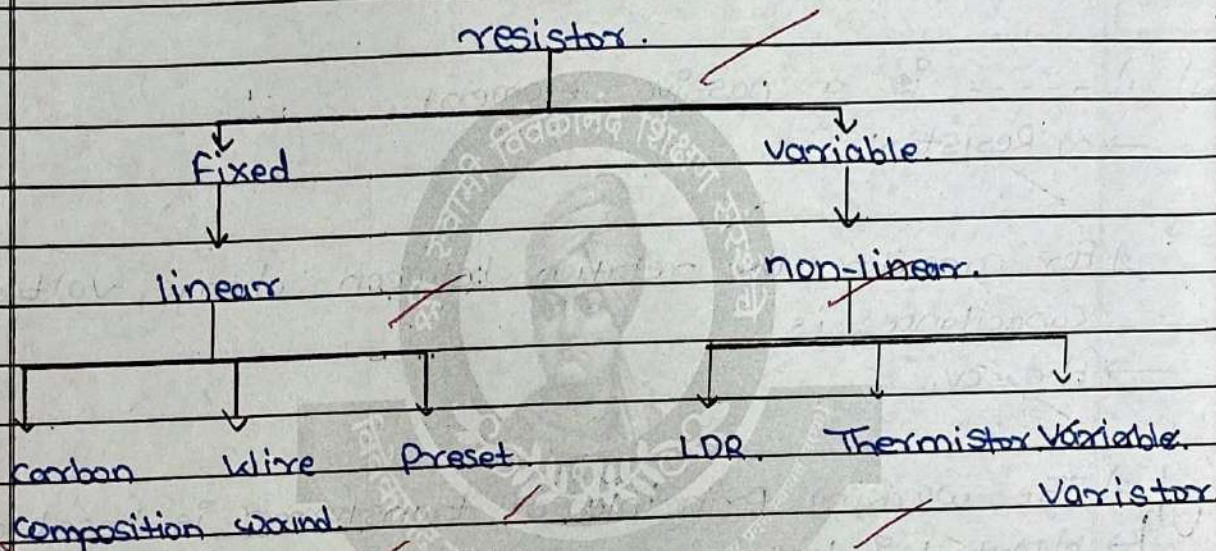
Q. No.

There are two Types of resistor.

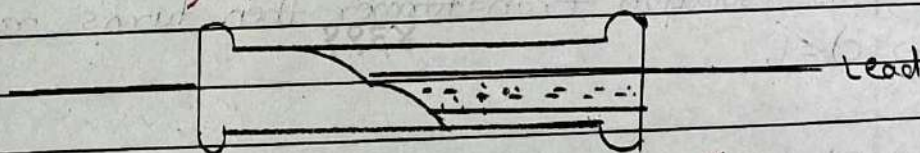
- 1) Fixed resistor.
- 2) Variable resistor.

Fixed resistor:

- 1) Carbon composition resistor.
- 2) Wire wound resistor.



Carbon composition:

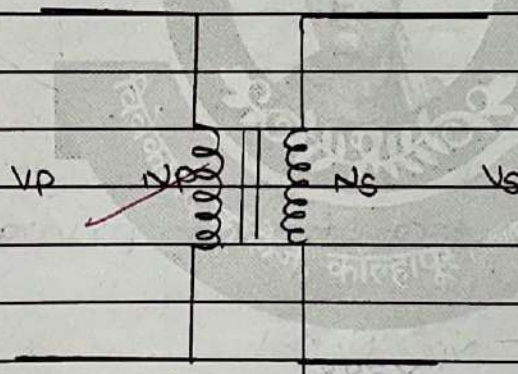
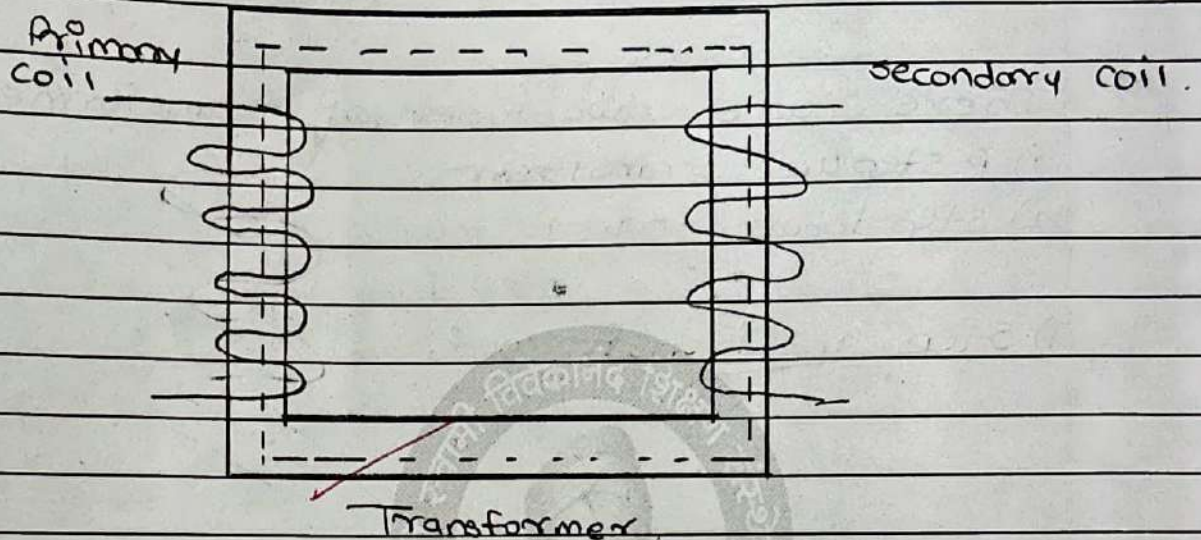


In carbon composition resistor graphite or ceramic are used. Carbon composition resistor is linear resistor. It is in Fixed resistor.

प्र. क्र.

Q. No.

2) Give the working principle of transformer. Explain stepup or step down transformer.



Transformer working on the principle of mutual inductance. The transformer used in two coil. First coil is primary coil and another coil is secondary coil. In primary coil voltage (V_p) and in secondary coil voltage (V_s) is known, the turns ratio is given by,

$$\frac{V_p}{V_s} = \frac{N_p}{N_s}$$

Where,

प्र. क्र.

Q. No.

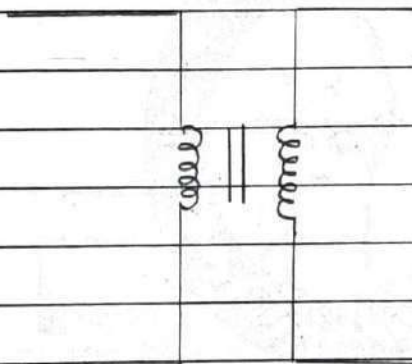
 V_p = Voltage across primary coil. V_s = Voltage across secondary coil. N_p = Number of turns in primary coil. N_s = Number of turns in secondary coil.

There are two types of transformer:-

1) Step up transformer.

2) Step down transformer.

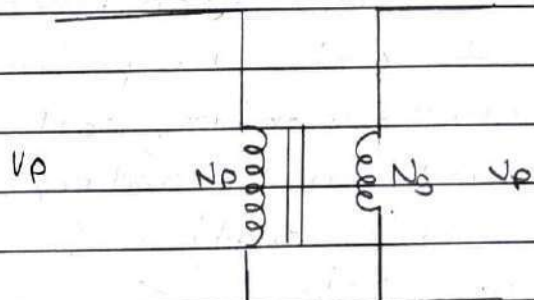
1) Step up transformer.



The Step up transformer primary coil is less than secondary coil.

$$N_p < N_s \Rightarrow 1$$

2) Step down Transformer.



In Step down transformer primary coil is greater than secondary coil.

$$N_p > N_s \Rightarrow 1$$



॥ ज्ञान, विज्ञान आणि सुसंस्कार यांसाठी शिक्षण प्रसार ॥

- शिक्षणमहर्षी डॉ. बापूजी साळुंखे

VIVEKANAND COLLEGE, KOLHAPUR

(An Empowered Autonomous Institute)

Assignment

Student's Sign : DA

Seat No./ Roll No. : 7317.

Seat No./ Roll No.
In words

17160

B B R O Y G B V G W
0 1 2 3 4 5 6 7 8 9

प्र. क्र.

Q. No.

Q3) 1) Find the resistance value of the following Colour codes.

1) Yellow, Violet, Red, Gold.

→ 4 7 $10^2 \pm 5\%$
~~48700 Ω , $\pm 5\%$~~

2) Brown, Black, Orange, gold.

→ 1 0 $10^3 \pm 5\%$
 $10 \times 10^3, \pm 5\%$
~~10 K Ω , $\pm 5\%$~~

Oh 3) Orange, Orange, Red, Silver.

→ 3 3 $10^2 \pm 10\%$
~~3300 Ω , $\pm 10\%$~~

4) Red, Red, Brown, Silver.

→ 2 2 $10^1 \pm 10\%$

~~220 Ω , $\pm 10\%$~~

प्र. क्र.

Q. No.

2) Write a note on capacitor.

→

Capacitor is a ~~diel~~ source which stores potential energy, the unit of capacitor is Farad (F). Capacitor is separated by dielectric material. There are ~~four~~ types of capacitor:-

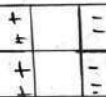
1) Paper

2) mica

3) Air.

4)

Symbol of capacitor is:-

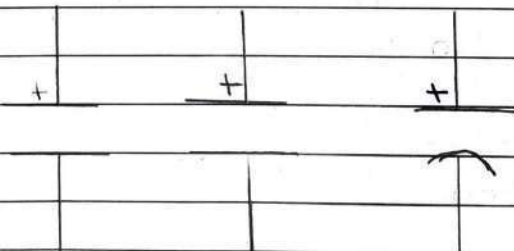


The formula of capacitor is:-

$$C = \frac{\epsilon A}{d}$$

53

Symbols:-





॥ ज्ञान, विज्ञान आणि सुसंस्कार यांसाठी शिक्षण प्रसार ॥

Unit 1
Electronics II

- शिक्षणमहर्षी डॉ. बापूजी साळुंखे

VIVEKANAND COLLEGE, KOLHAPUR

(An Empowered Autonomous Institute)

Assignment

Student's Sign : Nakothawale

Seat No./ Roll No. : 7319

Seat No./ Roll No.
In words

06272

18
20

21

प्र. क्र.
Q. No.

Q1

1] — is the passive element.

→ a) ~~Resistor~~ Resistor

2] For capacitor, the relation between charge, voltage and capacitance is —

→ b) ~~Q = CV~~

Oh 3] The working principle of transformer is based on

→ b) ~~mutual inductance~~ Induction.

4] In Isolation transformer, The turns ratio is —

→ c) = 1

Q2

→ 2] 1 Transformer.

- It is mutual inductance.

- There are two types of coil in transformer.

Primary coil and Secondary coil

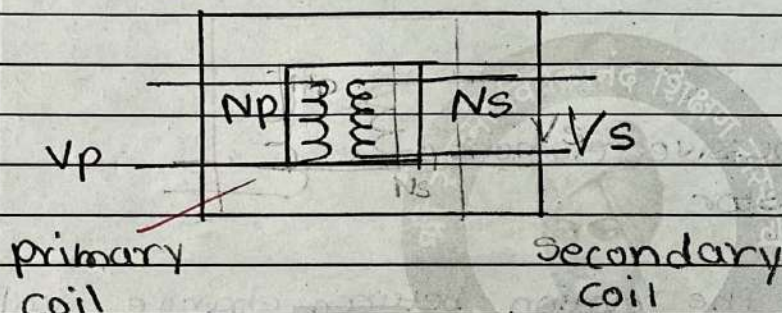
- On bases on coil there is a formula generated

02	Section	Q. No.																		
		Marks																		

प्र. क्र.
Q. No.

$$\frac{N_s}{N_p} = \frac{V_s}{V_p}$$

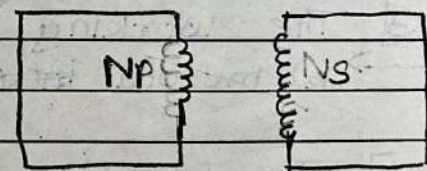
- N_s - Number of turns in secondary coil
- N_p - number of turns in primary coil
- V_s - Voltage of secondary coil.
- V_p - Voltage of primary coil.
- diagram of transformer.



- Step up transformer.

In this transformer number of turns in primary coil are less than number of turns in secondary coil.

- turns ratio = < 1



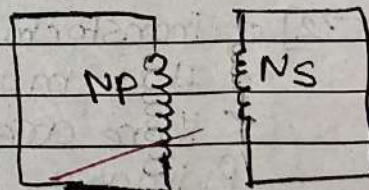
primary coil

Secondary coil.

- Step-down transformer

In this transformer number of turns in secondary coil are less than number of primary coil.

- turns ratio = > 1



primary coil

Secondary coil



॥ ज्ञान, विज्ञान आणि सुसंस्कार यांसाठी शिक्षण प्रसार ॥

- शिक्षणमहर्षी डॉ. बापूजी साळुंखे

VIVEKANAND COLLEGE, KOLHAPUR

(An Empowered Autonomous Institute)

Assignment

Student's Sign : Apatil

Seat No./ Roll No. : 7321

Seat No./ Roll No.
In words

06271

19
20
21

Q. 1

प्र. क्र.
Q. No.

1. is a passive element

→ a) ~~Resistor~~

2. For capacitor, the relation between charge, voltage & capacitance is

→ b) ~~$Q = CV$~~

3. The working principal of transformer is based on ...

→ b) ~~Mutual inductance~~

4. In Isolation transformer, the turns ratio is ...

→ c) ~~$= 1$~~

02	Section	Q. No.																	
		Marks																	

प्र. क्र.
Q. No.

Q. 2.

1) $\longrightarrow$

Resistor —

The resistor is a passive component which cannot transfer energy from one form to another called as passive element. The unit of resistor is (Ω) 'Omega'.

The symbol of resistor is :-



Classification of resistor

a) Fixed resistor

1) Linear resistor

- i) Carbon composition resistor
- ii) Film wound resistor
- iii) Wire-wound resistor

2) Non-linear resistor

- i) LDR
- ii) Voltage dependent resistor
- iii)

b) Variable resistor

04

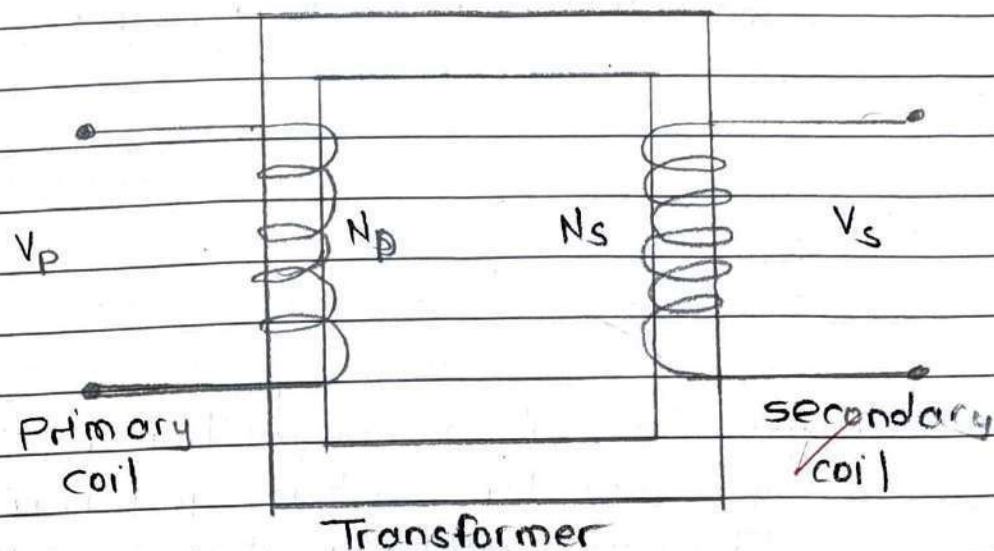
Section

Q. No.

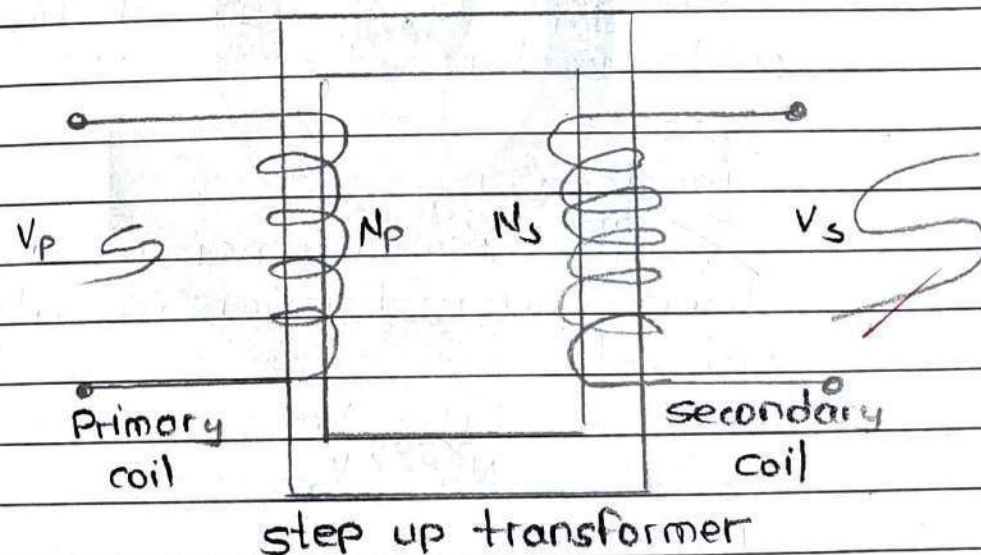
Marks

प्र. क्र.

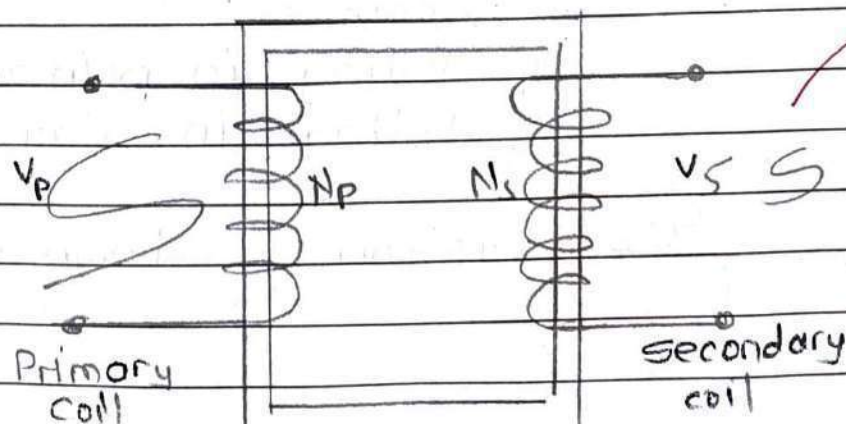
Q. No.



1] Step-up transformer



2] Step-down transformer





॥ ज्ञान, विज्ञान आणि सुसंस्कार यांसाठी शिक्षण प्रसार ॥

- शिक्षणमहर्षी डॉ. बापूजी साळुंखे

VIVEKANAND COLLEGE, KOLHAPUR

(An Empowered Autonomous Institute)

Assignment

Student's Sign : Apatil

Seat No./ Roll No. : 7321

Seat No./ Roll No.
In words

17157

प्र. क्र.
Q. No.

Q 3.

1]

a) Yellow, violet, Red, Gold
 $= 47 \times 10^2 \pm 5\% \Omega$

b) Brown, Black, Orange, Gold
 $= 10 \times 10^3 \pm 5\% \Omega$

c) Orange, orange, Red, silver
 $= 33 \times 10^2 \pm 10\% \Omega$

d) Red, Red, Brown, silver
 $= 22 \times 10^1 \pm 10\% \Omega$

2] Capacitor -

The capacitor is a passive component. Which cannot transfer energy from one form to another. The unit of capacitor is farad (F).

The symbol of capacitor is

प्र. क्र.

Q. No.

+ +

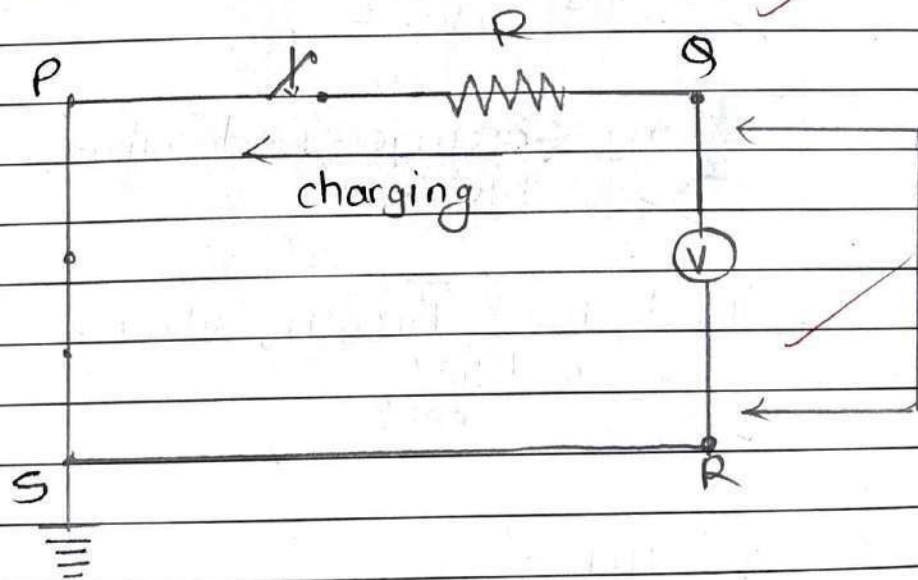
82111

Classification of capacitor

a) Fixed capacitor

*)

b) Variable capacitor





॥ ज्ञान, विज्ञान आणि सुसंस्कार यांसाठी शिक्षण प्रसार ॥

Electronic - I

- शिक्षणमहर्षी डॉ. बापूजी साळुंखे

①

VIVEKANAND COLLEGE, KOLHAPUR

(An Empowered Autonomous Institute)

Assignment

Student's Sign : Ahinde

Seat No./ Roll No. : 7329

Seat No./ Roll No.
In words

06278

18
20

Q. 1. select correct alternative.

प्र. क्र.

Q. No.

1] is a passive component.

→ a] ~~Resistor~~.

2] For capacitor, the relation between charge, Voltage of capacitance is

→ b] ~~$Q = CV$~~ .

3] The working principle of transformer is based on

→ b] ~~mutual inductance~~.

4] In isolation transformer, the turns ratio is

→ c] ~~$\neq 1$~~ , equal to 1.

Q. 2. Attempt any one.

1] Give the classification of resistor and explain construction of carbon composition resistor.

→ ~~classification of carbon composition resistor is:~~

Fixed resistor:

1] ~~Linear resistor~~: 1] ~~Carbon composition resistor~~.

2] ~~Film resistor~~

3] ~~wire wound resistor~~.

02	Section	Q. No.																	
		Marks																	

प्र. क्र.
Q. No.

2) Non-linear - i) Light ~~Emi~~ Dependent ~~diode~~ Resistor (LDR)

Variable :- i) Potentiometer

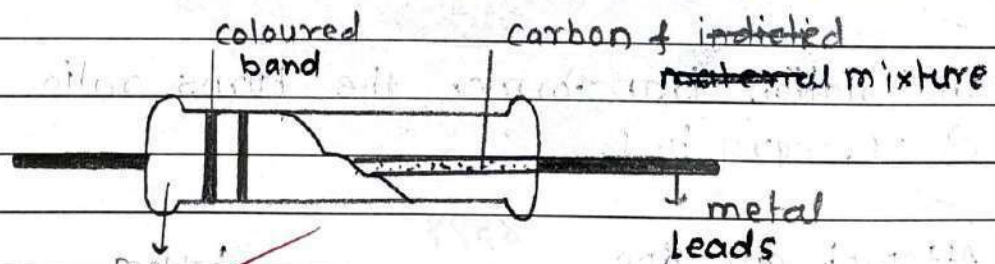
2) Reostat

3) Preset.

Explain construction of carbon composition resistor:-

Explanation:-

- 1) Carbon composition resistor is made from mixture of carbon, or graphite powder and non-conducting ceramic powder.
- 2) Carbon composition resistor is made molded to the mixture of cylindrical shape of wire metallic. marking the colour code is denoted resistor value.



3) The carbon composition resistor of power resistor is $\frac{1}{8}$, $\frac{1}{4}$, $\frac{1}{2}$, 1 and 2.

4) The tolerance of the resistor is $\pm 5\%$, $\pm 10\%$, $\pm 20\%$

5) The resistor are available resistance 1Ω to $\sim 22M\Omega$

6) marking the colour code is denoted the resistor value.

Attempt any two -

- Q. 3.
- प्र. ३.
- Q. No.
- 2] Write a short note on a Capacitor:
- 1] Capacitor is a component to ability or ~~also~~ 'capacity' to store energy in a form of electrically charges.
- 2] Capacitor is a positive component, which can not convert energy one form to another form.
- 3] It is measured in farade (F).
- 4] Symbol of capacitor is



Fig: Symbol.

5] There are two types of Capacitor:

- 1] Non-polar capacitor.
- 2] Electrolyte / Polar capacitor.

6] The capacitor are separate in to two parallel plates (metal) is called as dielectric material.

7] The voltage of positive terminal is higher to compare the negative terminal.

8] The two plates are separated by electrolyte.

प्र. क्र.

Q. No.

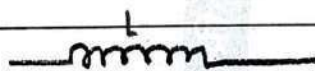
3] Inductor :

1) Inductor is electronic component which stored energy one form to magnetic.

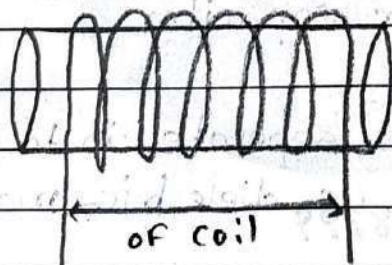
2] Inductor is passive components, which cannot convert energy one form to another form.

3] It is denoted by l .

4] Symbol :-



5] Diagram :-

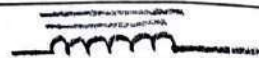


6] Types of ~~Coil~~ Inductor:

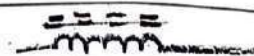
1] Air-core inductor :- 1] low inductance



2) Iron-core inductor: i) widely used.



3] Ferrite-core inductor: High frequency





॥ ज्ञान, विज्ञान आणि सुसंस्कार यांसाठी शिक्षण प्रसार ॥

- शिक्षणमहर्षी डॉ. बापूजी साळुंखे

②

VIVEKANAND COLLEGE, KOLHAPUR

(An Empowered Autonomous Institute)

Assignment

Student's Sign : Ashinde

Seat No./ Roll No. : 7325

Seat No./ Roll No.
In words

①

17163

प्र. क्र.
Q. No.

1) Find the resistance value of following colour codes.

a) Yellow, ^{Violet}~~White~~, red, Gold.

→ 3, 7, 10^2 , $\pm 5\%$
 $= 37 \times 10^2 \pm 5\% \Omega$

b) Brown, Black, orange, Gold.

$= 1, 0, 10^3, \pm 5\%$
 $= 10 \times 10^3 \pm 5\% \Omega$

c) orange, orange, ^{red}~~Gold~~, Silver.

$= 3, 3, 10^2, \pm 10\%$
 $= 33 \times 10^2 \pm 10\% \Omega$

d) red, red, brown, Silver.

$= 2, 2, 10^2, \pm 10\%$
 $= 22 \times 10^2 \pm 10\% \Omega$