

**Dr. BABASAHEB AMBEDKAR MARATHWADA  
UNIVERSITY, AURANGABAD**

**FACULTY OF SCIENCE**

**B.Sc. First Year Practical pattern**

**ELECTRONICS**

**PAPER III**

*Time: Four Hours*

*Max. Marks : 100*

**SCHEME OF MARKING**

Each practical paper for B.Sc. First Year carries **100** marks, both for Paper III and Paper IV.

The distribution of marks for each practical paper is as under :

**FOR EXPERIMENT : 75 Marks**

**FOR Project : 25 Marks**

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**TOTAL : 100 MARKS**

**Dr. BABASAHEB AMBEDKAR MARATHWADA  
UNIVERSITY, AURANGABAD  
FACULTY OF SCIENCE  
B.Sc. First Year Practical Examination  
ELECTRONICS - PAPER III**

*Time: Four Hours*

*Max.Marks:100*

**Centre : ----- Seat No :**

**1) A) Study of PN junction diode characteristics, determination of ac and dc resistance.**

Particulars	Max. Marks	Mark Obtained
a) Circuit diagram	10	-----
b) Connections	10	-----
c) Observations	20	-----
d) Calculation & graph	10	-----
e) Result	05	-----
f) Oral	10	-----
g) Record book	10	-----
<b>Total Marks</b>	<b>75</b>	<input type="text"/>

**B) Project**

a) Project report	10	-----
b) Presentation	15	-----
<b>Total Marks</b>	<b>25</b>	<input type="text"/>

**Signature of Examiners** i) -----  
ii) -----

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ELECTRONICS - PAPER III**

*Time: Four Hours*

*Max.Marks:100*

Centre : ----- Seat No :

**2) A) Study of Zener diode characteristics, determination of  $V_z$ ,  $I_z$  and  $Z_z$ .**

Particulars	Max. Marks	Mark Obtained
a) Circuit diagram	10	-----
b) Connections	10	-----
c) Observations	20	-----
d) Calculation & graph	10	-----
e) Result	05	-----
f) Oral	10	-----
g) Record book	10	-----
<b>Total Marks</b>	<b>75</b>	<input type="text"/>

**B) Project**

a) Project report	10	-----
b) Presentation	15	-----
<b>Total Marks</b>	<b>25</b>	<input type="text"/>

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ELECTRONICS - PAPER III**

*Time: Four Hours*

*Max.Marks:100*

Centre : ----- Seat No :

**3) A) Study of transistor characteristics in CE configuration, determination of  $\beta$ .**

Particulars	Max. Marks	Mark Obtained
a) Circuit diagram	10	-----
b) Connections	10	-----
c) Observations	20	-----
d) Calculation & graph	10	-----
e) Result	05	-----
f) Oral	10	-----
g) Record book	10	-----
<b>Total Marks</b>	<b>75</b>	<input type="text"/>

**B) Project**

a) Project report	10	-----
b) Presentation	15	-----
<b>Total Marks</b>	<b>25</b>	<input type="text"/>

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ELECTRONICS - PAPER III**

Time: Four Hours

Max.Marks:100

Centre : ----- Seat No :

**4) A) Study of transistor characteristics in CB configuration, determination of  $\alpha$ .**

Particulars	Max. Marks	Mark Obtained
a) Circuit diagram	10	-----
b) Connections	10	-----
c) Observations	20	-----
d) Calculation & graph	10	-----
e) Result	05	-----
f) Oral	10	-----
g) Record book	10	-----
<b>Total Marks</b>	<b>75</b>	<input type="text"/>

**B) Project**

a) Project report	10	-----
b) Presentation	15	-----
<b>Total Marks</b>	<b>25</b>	<input type="text"/>

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Time: Four Hours

Max.Marks:100

Centre : ----- Seat No :

**5) A) Study of JFET characteristics, determination of  $r_p$  and  $g_m$ .**

Particulars	Max. Marks	Mark Obtained
a) Circuit diagram	10	-----
b) Connections	10	-----
c) Observations	20	-----
d) Calculation & graph	10	-----
e) Result	05	-----
f) Oral	10	-----
g) Record book	10	-----
<b>Total Marks</b>	<b>75</b>	<input type="text"/>

**B) Project**

a) Project report	10	-----
b) Presentation	15	-----
<b>Total Marks</b>	<b>25</b>	<input type="text"/>

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*Time: Four Hours*

*Max.Marks:100*

Centre : ----- Seat No :

**6) A) Study of frequency response characteristics of CE amplifier, determination of 3 db band width.**

Particulars	Max. Marks	Mark Obtained
a) Circuit diagram	10	-----
b) Connections	10	-----
c) Observations	20	-----
d) Graph	10	-----
e) Result	05	-----
f) Oral	10	-----
g) Record book	10	-----
<b>Total Marks</b>	<b>75</b>	<input type="text"/>

**B) Project**

a) Project report	10	-----
b) Presentation	15	-----
<b>Total Marks</b>	<b>25</b>	<input type="text"/>

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*Time: Four Hours*

*Max.Marks:100*

Centre : ----- Seat No :

**7) A) Study of frequency response characteristics of Emitter Follower, determination of 3 db band width.**

Particulars	Max. Marks	Mark Obtained
a) Circuit diagram	10	-----
b) Connections	10	-----
c) Observations	20	-----
d) Graph	10	-----
e) Result	05	-----
f) Oral	10	-----
g) Record book	10	-----
<b>Total Marks</b>	<b>75</b>	<input type="text"/>

**B) Project**

a) Project report	10	-----
b) Presentation	15	-----
<b>Total Marks</b>	<b>25</b>	<input type="text"/>

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*Time: Four Hours*

*Max.Marks:100*

Centre : ----- Seat No :

**8) A) Study of frequency response characteristics of FET amplifier, determination of 3 db band width.**

Particulars	Max. Marks	Mark Obtained
a) Circuit diagram	10	-----
b) Connections	10	-----
c) Observations	20	-----
d) Graph	10	-----
e) Result	05	-----
f) Oral	10	-----
g) Record book	10	-----
<b>Total Marks</b>	<b>75</b>	<input type="text"/>

**B) Project**

a) Project report	10	-----
b) Presentation	15	-----
<b>Total Marks</b>	<b>25</b>	<input type="text"/>

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*Time: Four Hours*

*Max.Marks:100*

Centre : ----- Seat No :

**9) A) Study of frequency response characteristics of Current Series feedback amplifier, determination of 3 db band width.**

Particulars	Max. Marks	Mark Obtained
a) Circuit diagram	10	-----
b) Connections	10	-----
c) Observations	20	-----
d) Graph	10	-----
e) Result	05	-----
f) Oral	10	-----
g) Record book	10	-----
<b>Total Marks</b>	<b>75</b>	<input type="text"/>

**B) Project**

a) Project report	10	-----
b) Presentation	15	-----
<b>Total Marks</b>	<b>25</b>	<input type="text"/>

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ELECTRONICS - PAPER III**

*Time: Four Hours*

*Max.Marks:100*

Centre : ----- Seat No :

**10) A) Study of frequency response characteristics of Voltage Shunt feedback amplifier, determination of 3 db band width.**

Particulars	Max. Marks	Mark Obtained
a) Circuit diagram	10	-----
b) Connections	10	-----
c) Observations	20	-----
d) Graph	10	-----
e) Result	05	-----
f) Oral	10	-----
g) Record book	10	-----
<b>Total Marks</b>	<b>75</b>	<input type="text"/>

**B) Project**

a) Project report	10	-----
b) Presentation	15	-----
<b>Total Marks</b>	<b>25</b>	<input type="text"/>

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*Time: Four Hours*

*Max.Marks:100*

Centre : ----- Seat No :

**11) A) Study of frequency response characteristics of Two Stage R-C coupled amplifier, determination of 3 db band width.**

Particulars	Max. Marks	Mark Obtained
a) Circuit diagram	10	-----
b) Connections	10	-----
c) Observations	20	-----
d) Graph	10	-----
e) Result	05	-----
f) Oral	10	-----
g) Record book	10	-----
<b>Total Marks</b>	<b>75</b>	<input type="text"/>

**B) Project**

a) Project report	10	-----
b) Presentation	15	-----
<b>Total Marks</b>	<b>25</b>	<input type="text"/>

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ELECTRONICS - PAPER III**

Time: Four Hours

Max.Marks:100

Centre : ----- Seat No :

12) A) To Study the application of OP-AMP as  
1) Inverting amplifier 2) Non Inverting amplifier.

Particulars	Max. Marks	Mark Obtained
a) Circuit diagram	10	-----
b) Connections	10	-----
c) Observations	20	-----
d) Calculation	10	-----
e) Result	05	-----
f) Oral	10	-----
g) Record book	10	-----
<b>Total Marks</b>	<b>75</b>	<input type="text"/>

**B) Project**

a) Project report	10	-----
b) Presentation	15	-----
<b>Total Marks</b>	<b>25</b>	<input type="text"/>

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ELECTRONICS - PAPER III**

Time: Four Hours

Max.Marks:100

Centre : ----- Seat No :

13) A) To Study the application of OP-AMP as  
1) Inverting adder 2) Subtractor.

Particulars	Max. Marks	Mark Obtained
a) Circuit diagram	10	-----
b) Connections	10	-----
c) Observations	20	-----
d) Calculation	10	-----
e) Result	05	-----
f) Oral	10	-----
g) Record book	10	-----
<b>Total Marks</b>	<b>75</b>	<input type="text"/>

**B) Project**

a) Project report	10	-----
b) Presentation	15	-----
<b>Total Marks</b>	<b>25</b>	<input type="text"/>

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ELECTRONICS - PAPER III**

*Time: Four Hours*

*Max.Marks:100*

Centre : ----- Seat No :

**14) A) To Study the application of OP-AMP as Analogcomputer to solve equation  $E=aX+bY+cZ$ .**

Particulars	Max. Marks	Mark Obtained
a) Circuit diagram	10	-----
b) Connections	10	-----
c) Observations	20	-----
d) Calculation	10	-----
e) Result	05	-----
f) Oral	10	-----
g) Record book	10	-----
<b>Total Marks</b>	<b>75</b>	<input type="text"/>

**B) Project**

a) Project report	10	-----
b) Presentation	15	-----
<b>Total Marks</b>	<b>25</b>	<input type="text"/>

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**FACULTY OF SCIENCE**

**B.Sc. First Year Practical pattern**

**ELECTRONICS**

**PAPER IV**

*Time: Four Hours*

*Max.Marks : 100*

**SCHEME OF MARKING**

Each practical paper for B.Sc. First Year carries **100** marks, both for Paper III and Paper IV.

The distribution of marks for each practical paper is as under :

**FOR EXPERIMENT : 75 Marks**

**FOR Project : 25 Marks**

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**TOTAL : 100 MARKS**

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B.Sc. First Year Practical Examination  
ELECTRONICS - PAPER IV**

Time: Four Hours

Max.Marks:100

Centre : ----- Seat No :

1) A) To study the line and load regulation characteristics of Half Wave Rectifier using PN junction diode.

Particulars	Max. Marks	Mark Obtained
a) Circuit diagram	10	-----
b) Connections	10	-----
c) Observations	20	-----
d) Calculation & graph	10	-----
e) Result	05	-----
f) Oral	10	-----
g) Record book	10	-----
<b>Total Marks</b>	<b>75</b>	<input type="text"/>

**B) Project**

a) Project report	10	-----
b) Presentation	15	-----
<b>Total Marks</b>	<b>25</b>	<input type="text"/>

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ELECTRONICS - PAPER IV**

Time: Four Hours

Max.Marks:100

Centre : ----- Seat No :

2) A) To study the line and load regulation characteristics of Full Wave Rectifier using PN junction diode.

Particulars	Max. Marks	Mark Obtained
a) Circuit diagram	10	-----
b) Connections	10	-----
c) Observations	20	-----
d) Calculation & graph	10	-----
e) Result	05	-----
f) Oral	10	-----
g) Record book	10	-----
<b>Total Marks</b>	<b>75</b>	<input type="text"/>

**B) Project**

a) Project report	10	-----
b) Presentation	15	-----
<b>Total Marks</b>	<b>25</b>	<input type="text"/>

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ELECTRONICS - PAPER IV**

*Time: Four Hours*

*Max.Marks:100*

Centre : ----- Seat No :

**3) A) To study the line and load regulation characteristics of Bridge Rectifier.**

Particulars	Max. Marks	Mark Obtained
a) Circuit diagram	10	-----
b) Connections	10	-----
c) Observations	20	-----
d) Calculation & graph	10	-----
e) Result	05	-----
f) Oral	10	-----
g) Record book	10	-----
<b>Total Marks</b>	<b>75</b>	<input type="text"/>

**B) Project**

a) Project report	10	-----
b) Presentation	15	-----
<b>Total Marks</b>	<b>25</b>	<input type="text"/>

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ELECTRONICS - PAPER IV**

*Time: Four Hours*

*Max.Marks:100*

Centre : ----- Seat No :

**4) A) To study the line regulation characteristics of Shunt Capacitor Filter.**

Particulars	Max. Marks	Mark Obtained
a) Circuit diagram	10	-----
b) Connections	10	-----
c) Observations	20	-----
d) Calculation & graph	10	-----
e) Result	05	-----
f) Oral	10	-----
g) Record book	10	-----
<b>Total Marks</b>	<b>75</b>	<input type="text"/>

**B) Project**

a) Project report	10	-----
b) Presentation	15	-----
<b>Total Marks</b>	<b>25</b>	<input type="text"/>

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ELECTRONICS - PAPER IV**

Time: Four Hours

Max.Marks:100

Centre : ----- Seat No :

5) A) To study the line regulation characteristics of  $\pi$  type filter.

Particulars	Max. Marks	Mark Obtained
a) Circuit diagram	10	-----
b) Connections	10	-----
c) Observations	20	-----
d) Calculation & graph	10	-----
e) Result	05	-----
f) Oral	10	-----
g) Record book	10	-----
<b>Total Marks</b>	<b>75</b>	<input type="text"/>

B) Project

a) Project report	10	-----
b) Presentation	15	-----
<b>Total Marks</b>	<b>25</b>	<input type="text"/>

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ELECTRONICS - PAPER IV**

Time: Four Hours

Max.Marks:100

Centre : ----- Seat No :

6) A) To study the line and load regulation characteristics of Shunt Regulator using Zener diode

Particulars	Max. Marks	Mark Obtained
a) Circuit diagram	10	-----
b) Connections	10	-----
c) Observations	20	-----
d) Calculation & graph	10	-----
e) Result	05	-----
f) Oral	10	-----
g) Record book	10	-----
<b>Total Marks</b>	<b>75</b>	<input type="text"/>

B) Project

a) Project report	10	-----
b) Presentation	15	-----
<b>Total Marks</b>	<b>25</b>	<input type="text"/>

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ELECTRONICS - PAPER IV**

Time: Four Hours

Max.Marks:100

Centre : ----- Seat No :

7) A) To study the line and load regulation characteristics of Series Regulator using series pass transistor.

Particulars	Max. Marks	Mark Obtained
a) Circuit diagram	10	-----
b) Connections	10	-----
c) Observations	20	-----
d) Graph	10	-----
e) Result	05	-----
f) Oral	10	-----
g) Record book	10	-----
<b>Total Marks</b>	<b>75</b>	<input type="text"/>

**B) Project**

a) Project report	10	-----
b) Presentation	15	-----
<b>Total Marks</b>	<b>25</b>	<input type="text"/>

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Time: Four Hours

Max.Marks:100

Centre : ----- Seat No :

8) A) To study the line and load regulation characteristics of IC Regulator using IC 78xx.

Particulars	Max. Marks	Mark Obtained
a) Circuit diagram	10	-----
b) Connections	10	-----
c) Observations	20	-----
d) Calculation & graph	10	-----
e) Result	05	-----
f) Oral	10	-----
g) Record book	10	-----
<b>Total Marks</b>	<b>75</b>	<input type="text"/>

**B) Project**

a) Project report	10	-----
b) Presentation	15	-----
<b>Total Marks</b>	<b>25</b>	<input type="text"/>

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*Time: Four Hours*

*Max.Marks:100*

Centre : ----- Seat No :

**9) A) To study the line and load regulation characteristics of IC Regulator using IC 79xx.**

Particulars	Max. Marks	Mark Obtained
a) Circuit diagram	10	-----
b) Connections	10	-----
c) Observations	20	-----
d) Calculation & graph	10	-----
e) Result	05	-----
f) Oral	10	-----
g) Record book	10	-----
<b>Total Marks</b>	<b>75</b>	<input type="text"/>

**B) Project**

a) Project report	10	-----
b) Presentation	15	-----
<b>Total Marks</b>	<b>25</b>	<input type="text"/>

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ELECTRONICS - PAPER IV**

*Time: Four Hours*

*Max.Marks:100*

Centre : ----- Seat No :

**10) A) To study the Hartley Oscillator Circuit using Transistor.**

Particulars	Max. Marks	Mark Obtained
a) Circuit diagram	10	-----
b) Connections	10	-----
c) Observations& measurement of frequency on CRO	30	-----
d) Output waveform	10	-----
e) Result	05	-----
f) Oral	10	-----
g) Record book	10	-----
<b>Total Marks</b>	<b>75</b>	<input type="text"/>

**B) Project**

a) Project report	10	-----
b) Presentation	15	-----
<b>Total Marks</b>	<b>25</b>	<input type="text"/>

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ELECTRONICS - PAPER IV**

*Time: Four Hours*

*Max.Marks:100*

Centre : ----- Seat No :

**11) A) To study the Colpitts Oscillator Circuit using Transistor.**

Particulars	Max. Marks	Mark Obtained
a) Circuit diagram	10	-----
b) Connections	10	-----
c) Observations& measurement of frequency on CRO	30	-----
d) Output waveform	10	-----
e) Result	05	-----
f) Oral	10	-----
g) Record book	10	-----
<b>Total Marks</b>	<b>75</b>	<input type="text"/>

**B) Project**

a) Project report	10	-----
b) Presentation	15	-----
<b>Total Marks</b>	<b>25</b>	<input type="text"/>

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*Time: Four Hours*

*Max.Marks:100*

Centre : ----- Seat No :

**12) A) To study the Phase Shift Oscillator Circuit using Transistor.**

Particulars	Max. Marks	Mark Obtained
a) Circuit diagram	10	-----
b) Connections	10	-----
c) Observations& measurement of frequency on CRO	30	-----
d) Output waveform	10	-----
e) Result	05	-----
f) Oral	10	-----
g) Record book	10	-----
<b>Total Marks</b>	<b>75</b>	<input type="text"/>

**B) Project**

a) Project report	10	-----
b) Presentation	15	-----
<b>Total Marks</b>	<b>25</b>	<input type="text"/>

Signature of Examiners i) -----  
ii) -----



**Dr. BABASAHEB AMBEDKAR MARATHWADA  
UNIVERSITY, AURANGABAD  
FACULTY OF SCIENCE  
B.Sc. First Year Practical Examination  
ELECTRONICS - PAPER IV**

Time: Four Hours

Max.Marks:100

Centre : ----- Seat No :

**13) A) To study the Wien Bridge Oscillator Circuit using IC 741.**

Particulars	Max. Marks	Mark Obtained
a) Circuit diagram	10	-----
b) Connections	10	-----
c) Observations& measurement of frequency on CRO	30	-----
d) Output waveform	10	-----
e) Result	05	-----
f) Oral	10	-----
g) Record book	10	-----
<b>Total Marks</b>	<b>75</b>	<input type="text"/>

**B) Project**

a) Project report	10	-----
b) Presentation	15	-----
<b>Total Marks</b>	<b>25</b>	<input type="text"/>

Signature of Examiners i) -----  
ii) -----  
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ELECTRONICS - PAPER IV**

Time: Four Hours

Max.Marks:100

Centre : ----- Seat No :

**14) A) Study of Astable Multivibrator using IC 555.**

Particulars	Max. Marks	Mark Obtained
a) Circuit diagram	10	-----
b) Connections	10	-----
c) Measurement of P.W. & S.W.	20	-----
d) Display of waveform on CRO	10	-----
e) Ratio of P.W. to S.W.	05	-----
f) Oral	10	-----
g) Record book	10	-----
<b>Total Marks</b>	<b>75</b>	<input type="text"/>

**B) Project**

a) Project report	10	-----
b) Presentation	15	-----
<b>Total Marks</b>	<b>25</b>	<input type="text"/>

Signature of Examiners i) -----  
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ELECTRONICS - PAPER IV**

*Time: Four Hours*

*Max.Marks:100*

Centre : ----- Seat No :

**15) A) Study of Monostable Multivibrator using IC 555.**

Particulars	Max. Marks	Mark Obtained
a) Circuit diagram	10	-----
b) Connections	10	-----
c) Measurement of P.W. & S.W.	20	-----
d) Display of waveform on CRO	10	-----
e) Ratio of P.W. to S.W.	05	-----
f) Oral	10	-----
g) Record book	10	-----
<b>Total Marks</b>	<b>75</b>	<input type="text"/>

**B) Project**

a) Project report	10	-----
b) Presentation	15	-----
<b>Total Marks</b>	<b>25</b>	<input type="text"/>

Signature of Examiners i) -----  
ii) -----  
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ELECTRONICS - PAPER IV**

*Time: Four Hours*

*Max.Marks:100*

Centre : ----- Seat No :

**16) Study of Bistable Multivibrator using Transistor.**

Particulars	Max. Marks	Mark Obtained
a) Circuit diagram	10	-----
b) Connections	10	-----
c) Measurement of P.W. & S.W.	20	-----
d) Display of waveform on CRO	10	-----
e) Ratio of P.W. to S.W.	05	-----
f) Oral	10	-----
g) Record book	10	-----
<b>Total Marks</b>	<b>75</b>	<input type="text"/>

**B) Project**

a) Project report	10	-----
b) Presentation	15	-----
<b>Total Marks</b>	<b>25</b>	<input type="text"/>

Signature of Examiners i) -----  
ii) -----  
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ELECTRONICS - PAPER IV**

*Time: Four Hours*

*Max.Marks:100*

**Centre : ----- Seat No :**

**17) A) Study of Crystal Oscillator.**

<b>Particulars</b>	<b>Max. Marks</b>	<b>Mark Obtained</b>
a) Circuit diagram	10	-----
b) Connections	10	-----
c) Display of waveform on CRO	10	-----
d) Measurement of freq. using CRO	20	-----
e) Result	05	-----
f) Oral	10	-----
g) Record book	10	-----
<b>Total Marks</b>	<b>75</b>	<input type="text"/>

**B) Project**

a) Project report	10	-----
b) Presentation	15	-----
<b>Total Marks</b>	<b>25</b>	<input type="text"/>

**Signature of Examiners**    i) -----

ii) -----

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