9136

1410N719

Candidate's Seat No : _____

B.Sc. Sem.-6 (Rep) Examination

SE-311

Physics (A)

October-2025

Time : 2-30 Hours] **[Max. Marks : 70**

All questions carry equal marks.

All questions are compulsory.

Max. Marks : 70

Q 1 (A)	Discuss in detail: Random error.	7
	OR	
(A)	Explain in detail: The analysis of repeated measurements.	7
(B)	Write a note on Gaussian distribution function.	7
	OR	
(B)	Explain the rules for determining the numbers of significant figures.	7
Q 2 (A)	Write a note on resistance thermometers.	7
	OR	
(A)	Discuss in detail about thermistors.	7
(B)	Explain in brief: photoconductive detectors.	7
	OR	
(B)	Write a detail note on bolometer.	7
Q 3 (A)	List the applications of vacuum in different fields.	7
	OR	
(A)	Discuss in detail: Pirani gauge.	7
(B)	Explian in brief about how the leak testing has been done in case of vacuum.	7
	OR	
(B)	Explain in detail: Cold cathode gauge.	7
Q 4 (A)	Discuss the sources of uncertainty.	7
	OR	
(A)	Write a short note on thermocouple.	7
(B)	Explain in detail about temperature transducer.	7
	OR	
(B)	Discuss mechanical rotary pump.	7
Q 5	Answer any seven in short.	14
(1)	What do you mean by systematic error?	
(2)	What is experimental error?	
(3)	What is the difference between error and mistake?	
(4)	What do you mean by accuracy in measurement?	
(5)	Define mean free path.	
(6)	What is Seebeck effect?	
(7)	Write down ideal gas equation and label each term.	
(8)	State the principal of transducer.	
(9)	How much vacuum is achieved through multistage diffusion pump?	
(10)	Write any two characteristics of vacuum.	
(11)	Write two units of vacuum.	
(12)	1mbar=____torr.	

P.T.O

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Candidate's Seat No :____

B.Sc. Semester-6 Examination
SE - 311- Physics
(B Instrumentation)

Time : 2-30 Hours] **October-2025** **[Max. Marks : 70**

Instructions : (1) All questions carry equal marks.

Q.1. (a) Write in detailed about photo conductive cell. (7)

OR

(a) Discuss in detail about thermocouple

(b) Explain instruction and working of resistive position transducer and resistive pressure transducer (7)

OR

(b) Explain construction and working principle of thermister. Also discuss its application.

Q.2 (a) Give the comparisons between VOM & VTVM. Explain the working of single tube VTVM using neat circuit diagram. (7)

OR

(a) Using block diagram, explain the working of digital voltmeter.

(b) What do you mean by electronic voltmeter? Draw a neat circuit diagram of FETVM and explain its working. (7)

OR

(b) Draw the diagram of the basic meter movement and write about the construction and principle of operation for it.

Q.3 (a) With the help of neat block diagram, explain the working of AF sine and square wave generator. (7)

OR

(a) Draw the block diagram of sweep generator and explain it.

(b) Describe the operation of the function generator with the help of block diagram. (7)

OR

(b) Describe the working of laboratory square and pulse wave generator along with necessary diagram.

Q.4 (a) Explain about piezoelectric transducer and resistance temperature detectors. (7)

OR

(a) Give the characteristics of moving coil meter movement.

(b) Write notes on microphone. (7)

OR

(b) Write note on random noise generator.

Q.5 Answer the following in short : (Any seven) **(14)**

1) Write the principle of transducer.
2) What do you mean by the time constant of thermocouple?
3) List two variable resistance type transducers.
4) What is the piezoelectric effect ?
5) Give two advantages of digital instrument over analog instrument.
6) Define analog instrument.
7) Give two names of measurement standards.
8) Give the full form of VOM and VTVM.
9) Write one advantage of wire gauge.
10) Give the range of AF and RF signal.
11) Give full form of PRR & UHF.
12) Define duty cycle.

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B.Sc. Sem.-6 (Rep) Examination

SE-311

Physics (C)

October-2025

Time : 2-30 Hours] **[Max. Marks : 70**

Instructions: (1) Figures to the right indicate marks of the questions.
(2) Symbols have their usual meanings.

Q.1 (A) Explain Various Controls in VB. 7

OR

Explain First Screen of VB. 7

(B) Explain uses of VB in education. 7

OR

Explain List Box and Combo box in VB. 7

Q.2 (A) Write note on Nested For Loop in VB. 7

OR

Write short note on if-then-else statement in VB. 7

(B) Write the difference between Explicit declaration and Implicit declaration. 7

OR

Describe the Data Type Variant in VB. 7

Q.3 (A) Write a VB script to prepare a simple arithmetic calculator. 7

OR

Write a VB script to calculate ${}^{n}P_{r}$. 7

(B) Write a VB script to print two digit even numbers. 7

OR

Explain Option Button and Text Box Controls in VB. 7

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Q.4 (A) Write a note on Label Properties. 7

OR

Explain Dim Statement. 7

(B) Describe Do While statement briefly in VB. 7

OR

Write a VB script to print numbers from 1 to 99. 7

Q.5 Short answer (any **Seven**) 14

(1) What is string data type?

(2) What is the use of Text Box?

(3) How to change the caption property?

(4) What do you mean by Boolean data type in VB?

(5) Write the syntax of Dim statement.

(6) Write the syntax of Select…Case statement.

(7) What is ARRAY?

(8) Define Static variable.

(9) What is the use of Picture Box?

(10) Write the shortcut key for select all and save.

(11) Define Local variable.

(12) What is the Double Data type?

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