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N 635

B.Sc.sem-6
Physics Elective section-A
Paper No. 311

Experimental & Measurement Techniques

Time: 2.30

Maxi.Marks:70

- Que-01 (A) Write short note on Random error [7]
OR
(A) Explain the Significant figures.
(B) Find out the probability of obtaining 4 head in 6 tosses using an unbiased coin.
OR
(B) Discuss in about source of uncertainty. [7]
- Que-02 (A) Explain the thermal radiation temperature measurements. [7]
OR
(A) Explain for Transducer (1) Dead time (2) Rise time (3) Setting time
(B) Write short note on semiconductor temperature sensor. [7]
- OR
- Que-03 (B) Write short note on photo emissive detector.
(A) Write short note on Infra-red pyrometers. [7]
OR
(A) Give application of vacuum system.
(B) Explain the Rotray pump and Multistage diffusion pump. [7]
OR
(B) Find the rms speed of hydrogen at 127°C
- Que-04 (A) What is pump speed. Show that the pressure at time t for a pump speed S [7]
And the ultimate pressure P_0 is $P = P_0 e^{-\frac{St}{V}}$
OR
(A) Write short note on Turbo molecular pump and Absorption pump.
(B) Discuss about pirani gauge and penning cold cathode gauge [7]
OR
(B) Explain the characteristics of vacuum.
- Que-05 (A) Do as direct (Any seven, Each question carry two mark) [14]
(01) Give the unit of time constant.
(02) Define Probability.
(03) Write down the formula for gravitation law.
(04) What is mean free path/?
(05) Full form of LED.
(06) What is Hysteresis?
(07) What is the different between mistake & error?
(08) What is optical density?
(10) Give the unit of pressure.
(11) Define activation energy.
(12) What is black body?

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Candidate's Seat No : _____

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

Physics - 311-B

(Instrumentation)

Time : 2-30 Hours]

October - 2024

[Max. Marks : 70

- Instructions :** (1) All question carry equal marks.
(2) Symbols used have their meanings as usual.
(3) All questions are compulsory.

- 1 (a) Write short note on LVDT. 7
- OR**
- (a) Define transducers and give classification. 7
- (b) Explain construction and working of thermocouple. 7
- OR**
- (b) Give brief account on resistive position and resistive pressure transducers. 7
- 2 (a) Give comparison between VOM and VIVM. 7
- OR**
- (a) Give the difference between digital and analog voltmeter. Give block diagram and explain digital voltmeter. 7
- (b) Give neat figure of basic Meter Movement and write about its operation principle. 7
- OR**
- (b) Give neat circuit diagram of FETVM and explain its working. 7
- 3 (a) Describe with necessary diagram working of laboratory square and pulse wave generator. 7
- OR**
- (a) Draw schematic diagram of the conventional standard signal generator and explain its working. 7
- (b) Draw block diagram of sweep generator and explain its working. 7
- OR**
- (b) Give brief account on sine and square wave generators. 7
- 4 (a) Explain construction and working of LVDT. 7
- OR**
- (a) Explain Thermistor with its construction, response time, advantages and disadvantages. 7
- (b) Describe full scale deflection current I_m , Internal resistance of the coil R_m and sensitivity S of moving coil meter's movement characteristics. 7
- OR**
- (b) Give brief account on noise generator. 7

5 Answer in brief (any seven) :

14

- (1) What is difference between pulse and square wave?
 - (2) Define analog instrument.
 - (3) Define passive transducer.
 - (4) Give unit of current sensitivity.
 - (5) What is time constant of thermocouple?
 - (6) Give two names of temperature transducers.
 - (7) Write advantages of strain gauge.
 - (8) Define duty cycle.
 - (9) Calculate sensitivity of a 40 μ A meter movement.
 - (10) Write two different comparisons between VOM and VTVM.
 - (11) What is the difference between Photovoltaic and photoconductive devices?
 - (12) Write applications of thermocouples.
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N 635-4

GUJARAT UNIVERSITY

April – 2024

B.Sc. Semester-VI

EC-311 : PHYSICS (SEC – C)
(Visual Basics)

Time: 2:30 Hours

TOTAL MARKS: 70

Q.1(a) Explain the various controls in Visual Basics. (7)

OR

(a) Explain the applications of Visual Basics in Education. (7)

(b) Write a detailed note on Project explorer. (7)

OR

(b) Describe the File Menu of VB in detail. (7)

Q.2(a) Write a VB script to print first 30 natural numbers. (7)

OR

(a) Write a note on Nested for Loop in VB. (7)

(b) Write a VB script to prepare a simple calculator. (7)

OR

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

Q.3(a) Explain code window and its execution. (7)

OR

(a) Explain Dim statement. (7)

(b) Write a note on Radio Button controls in VB. (7)

OR

(b) Write a note on Global variables in VB. (7)

N 635-5

Q.4(a) Write a note on Runtime error in VB. (7)

OR

(a) Explain Date and Time data types in VB. (7)

(b) Write a VB script to calculate the factorial of first 10 numbers. (7)

OR

(b) Write a note on logical error handling in VB. (7)

Q.5 Answer in short (Any Seven) (14)

- (i) Write the syntax of InputBox command in VB.
 - (ii) Define Explicit variable in VB.
 - (iii) Write short cut key to paste any portion within that form in VB.
 - (iv) Which function key is used to modify content in VB?
 - (v) What is the default form name in VB?
 - (vi) Which short cut key is used to bold the data in VB?
 - (vii) What is the default file name in VB?
 - (viii) Write the short cut key for redo in VB.
 - (ix) What is the use of TextBox in VB?
 - (x) Write the short cut key to run any project in VB.
 - (xi) How can we change caption property in VB?
 - (xii) Explain the Design View in VB.
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