KANNUR UNIVERSITY

(Abstract)

Revised Syllabus of Core Practical papers (**6B16PHY- Practical-II and 6B17PHY-Practical III**) of B.Sc. Physics Programme – under Choice Based Credit & Semester System in Affiliated Colleges- Implemented with effect from 2017 admission-Orders Issued.

Academic Branch

No.Acad/C2/986/2014 Civil Station P.O, Dated, 21/05/2019

Read: 1. U.O of even number dated 28/05/2014

2. The Minutes of the meeting of the Board of Studies in Physics (UG) held on 25/04/2019 and 26/04/2019

ORDER

1. As per paper read (1) above, the scheme, syllabus and pattern of question papers for Core, Complementary and open courses in B.Sc. Physics Programme were implemented in the University w.e.f 2014 admission.

2. As there were certain anomalies in the syllabus of Practical Papers of B.Sc. Physics programme implemented w.e.f 2014 admission, the meeting of the BOS in Physics (UG) held on 26/04/2019 vide paper read (2) above, recommended to incorporate certain modifications in the syllabus of Vth & VIth Semester core practical paper **6B16PHY – Practical II and 6B17PHY- Practical III** - of B.Sc. Physics programme w.e.f 2017 admission and the Chairman submitted the syllabus of the same for implementation w.e.f 2017 admission.

3. The Vice-Chancellor, after examining the matter in detail, and in exercise of the powers of the Academic Council as per section 11(1) of Kannur University Act 1996 and

all other enabling provisions read together with, accorded sanction to implement , the Revised Syllabus of Vth & VIth Semester core practical paper **6B16PHY – Practical II and 6B17PHY- Practical III** of B.Sc. Physics programme w.e.f 2017 admission, incorporating the changes, as recommended by the Board of Studies in Physics (UG), subject to report to the Academic Council.

4. The modified pages of the syllabus concerned are uploaded in the University website.

5. U.O read as per the paper (1) above, stands modified to this extent.

Orders are issued accordingly.

Sd/-
Deputy Registrar (Academic)

For REGISTRAR

To

1. The Principals of Colleges Offering B.Sc. Physics Programmes
2. The Examination Branch (through PA to CE)

Copy to

1. The Chairman Board of Studies in Physics (UG).
2. P S to VC/PA to PVC/PA to Registrar
3. DR/AR I Academic
4. The Computer Programmer (For uploading in the University Website)
5. SF/DF/FC

Forwarded/ by Order

Section Officer

KANNUR UNIVERSITY
CIVIL STATION P.O.
KANNUR
Pin-670 002
THAVAKKARA

KANNUR UNIVERSITY

BSc (Physics): Core XVII-Practical

6B17PHY: Practical-III

Semester- 5&6, Credit-4, hours-72, Max.Ext. Marks-40, Max.Int. marks-10

Note: I.A brief theoretical back ground of each experiment must be given to the students before each cycle of experiments and assess it (3 to 4 hrs). Students have to maintain a practical log book regularly signed by the teacher in charge and to be submitted at the time of University Examination. Fair record is not required. All the 19 experiments have to be performed.

II. Students must refer the diode/transistor/IC data manual to get details of the components in all electronic experiments.

1. Bridge Rectifier- study of ripple factor with and without filter (by soldering)
2. Construction of a voltage regulator using Zener diode after finding Zener voltage
3. Construction of a Single transistor voltage regulator
4. Realization of logic gates using transistors (by soldering)
5. Common emitter amplifier (single stage) - frequency response and gain (by soldering)
6. Feedback circuits - voltage series and current series
7. Power amplifier - Frequency response and band width
8. Hartley Oscillator using Transistor(by soldering)
9. Phase Shift Oscillator using Transistor
10. Multi vibrator (astable) using Transistors
11. Op-amp - inverting and non-inverting amplifier, voltage follower
12. Op-amp - differentiator & integrator
13. Op-amp - multi vibrator (astable)
14. Wein Bridge Oscillator using IC 741

Computer Programming using python*

15. Solution of equations by bisection method (square root of a number)
16. Solution of equations by Newton - Raphson method (cube root of a number)
17. Numerical Integration - Trapezoidal Method
18. Numerical Integration - Simpson's 1/3rd rule
19. Solution of differential equation Runge - Kutta method (Harmonic Oscillator)

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*Students must be encouraged to use Linux operating system.

Books for Reference:

1. Practical Physics by Sasikumrar (PHI)
2. Core course Experimental Physics by Dr. P Sethumadhavan & Dr. A K Anila (Manjusha publication, Vol. I and Vol. II)
3. Electronics Lab Manual by Dr. K A Navas (Rajath Publishers, Vol. I and Vol. II)
4. Electronics Laboratory Primer by S Poorna Chandra & B Sasikala (S Chand)
5. Python for Education by Ajith Kumar B P (Calicut University Central Co-Operative Stores)
6. Core Course Practical Physics I and II by C J Babu & K Vijayalakshmi (Calicut University Central Co-Operative Stores).

KANNUR UNIVERSITY

Appendix to U.O No. Acad/C2/986/2014 dated 21/05/2019

BSc (Physics): Core XVI-Practical

6B16PHY: Practical –II

Semester-5&6, Credit-4,Contact hours-72,Max. Ext. Marks-40, Max. Int. Marks-10

Note: I. A brief theoretical back ground of each experiment must be given to the students before each cycle of experiments and assess it (3 to 4 hrs). Students have to maintain a practical log book regularly signed by the teacher in charge and to be submitted at the time of University Examination. Fair record is not required. All the 22 experiments have to be performed.

1. Surface Tension of given liquid (water) by capillary rise method (radius using microscope)
2. Field along the axis of a coil (circular coil) - Determination of m and B0
3. Rigidity modulus of the material -Static torsion
4. Spectrometer - Cauchy's constants assuming wavelengths
5. Spectrometer - i – i' curve
6. Spectrometer: grating-normal incidence
7. Spectrometer - grating- minimum deviation
8. Moving Coil Galvanometer (Mirror Galvanometer) - Figure of merit
9. Ballistic Galvanometer - ballistic constant using solenoid inductor
10. Ballistic Galvanometer - absolute capacity of a capacitor
11. Ballistic Galvanometer - high resistance by leakage
12. Potentiometer - Resistance and resistivity
13. Potentiometer - Calibration of high range voltmeter
14. Potentiometer - Reduction factor of TG and B_o
15. Conversion of a galvanometer into an ammeter and calibration using potentiometer
16. Carey Foster's Bridge - Temperature coefficient of resistance
17. Determination of dielectric constant using charging and discharging of a capacitor
18. Planck's constant using LED (use different colour LED's)
19. Energy band gap of a semiconductor (semiconductor diode in forward bias)
20. Newton's Rings - wavelength of sodium light
21. Air Wedge - Diameter of a thin wire
22. Laser - slit width and grating pitch

References:

1. Advanced practical physics for students by Worsnop & Flint
2. Practical Physics by Sasikumrar (PHI)
3. Core course Experimental Physics by Dr. P Sethumadhavan & Dr. A K Anila (Manjusha publication, Vol. I and Vol. II)
4. Core Course Practical Physics I and II by C J Babu & K Vijayalakshmi (Calicut University Central Co-Operative Stores).