Institutional Distinctiveness

The college in its vision has stated that it will provide excellent infrastructure with advanced technological facilities at college for teaching- learning. Over the years in addition to physical facilities, the college had taken conscious efforts to introduced technology in teaching learning. The main focus of the college is to provide not only quality education facilities to the socially and economically weaker sections of society. Following are the distinctiveness areas of the college.

THECHNOLOGY IN TEACHING & LEARNING:

According to its vision, the college has introduced high class technological methods of teaching and learning by providing the students with latest information technology facilities.

Following is the list of some quality equipment and software provided to students:

1. Water Analyser Kit-Soil and water analysis. To measures various physicochemical parameter of water and soil sample.

2. Photo electric Colorimeter-For B.Sc. and M.Sc. Practical's. To measure absorbance and transmittance of solution.

3. Digital Potentiometer.-For B.Sc. and M.Sc. Practical, To measure potential of solution.

4. Ice Flaker- For B.Sc. and M.Sc. Practical. To prepare ice for practical

5. Single Beam UV- Visible Spectrophotometer. For M.Sc. practical project work.

Simultaneous determination of T. Metals from sample.

6. Vacuum Pump- For B.Sc. and M.Sc. Practical. Filtration purpose / Separation of PPT from its mother liquor.

7. Microwave Synthesizer-Project work: To complete the reaction with in short time. To increase the rate of reaction.

8. Melting Point Apparatus-B.Sc. and M.Sc. To take M.P./ of Compounds.

9. Digital Conductivity-B.Sc. and M.Sc. practical, To measure the conductance of solution.

10. Deep Freezer 170 Capacity-M.Sc. practical, To perform the reaction whose suitable temp. less than 0 c.

11. Domestic Microwave Oven-B.Sc. and M.Sc. practical, To perform gravimetric experiments. For drying of crucibles.

12. Electronic Balance

For B.Sc. and M.Sc. practicals weighing of samples.

13. Heating Oven with Timer.

For B.Sc. and M.Sc. practicals for fast drying.

14. Thermostat.

To attain mention constant temp.

15. PH Meter.

B.Sc. and M.Sc. Practicals.

To measure pH of solution.

16. UltraSonicator.

Project work:

Synthetic chemistry. To increase the rate of reaction.

17. Digital Turbidity Meter.

M.Sc. practicals

To measure turbidance of solution.

18. G.M. Counter.

B.Sc. and M.Sc. practicals.

19. Digital Balance.

For B.Sc. and M.Sc. practicals weighing of samples.

20. Magnetic Stirrer with Hot Plate.

B.Sc. and M.Sc. practical

For continuous stirring at specified temp.

21. Heating Mantles.

B.Sc. and M.Sc. practicals

For synthesis of various compounds.

22. Rotary Evaporator.

M.Sc. practicals/ Project work purifications and separation of solvents.

23. Rotary Shaker.

M.Sc. practicals/ Project work for continuous shaking with specific rotation in synthetic chemistry.

24. UV. Cabinet.

For identification of spots on chromate graphic plate.

25. Colorimeter.

B.Sc. and M.Sc.

To measure absorbance and solution.

26. Refrigerator.

B.Sc. and M.Sc. practicals for long term cooling.

27. Conductivity Meter.

B.Sc. and M.Sc. practicals.

To measure conductance of solution.

28. Polari Meter.

B.Sc. practicals.

To measure optical activity of polar solution.

29. Digital Potentiometer.

B.Sc. and M.Sc. Practical

To measure emf of solution.

30. Distilled Water Plant.

B.Sc. and M.Sc. Practicals.

31. Refract meter.

B.Sc. practicals.

To measure refractive index of pure solvent

32. Magnetic Stirrer.

B.Sc. and M.Sc. practical

For titration purpose

33. Laminar air flow.

Provides a working platform with aseptic /sterile conditions for the tissue culture. It has controls flow of air that passes through HEPA (High Efficiency Percolate Air) filter that removes the particulates from the air.

34.Autoclove

It carries out the exact function of sterilizing materials. It is equipment that uses pressure and steam to reach and maintain a temperature that is too high for any microorganisms and their spores to live.

35. BOD Incubator.

This incubator is used to maintain temperature for tissue cultured test tubes and vessels. It is also useful for the storage and incubation of bacterial and fungal microorganism which require high degree of constant temperature accuracy.

36. Digital moisture meter.

Seed moisture is the most important attribute influencing seed quality and storability. Digital moisture meter determines the moisture content of seed for their further use.

37. Remi centrifuge.

Testing filters for determination of test concentrate. Useful for fuel filters for testing the purity and suitability of the oil.

38. Digital PH Meter.

PH meter is useful in determining the correct PH of buffer solution & other solutions which are used in the biochemical reactions.

39. Dissecting tray.

Dissecting tray is made up of tin & paraffin wax. It is used for the Dissecting various types of animals like Frog, Earthworm, Starfish etc.

40. Feeder (Poultry)

Feeder is a equipment used for feeding to the birds of commercial Poultry. But it is used to demonstrate the process of poultry feeding in Applied zoology.

41. Drinker (Poultry): -

Drinker is equipment which is used to drink water for poultry birds without any contamination, but for demonstration purpose. It is kept in laboratory.

42. Inset cadge: -

For the dissection of cockroach, Cockroaches are kept in cadge.

43. Cooling centrifuge: -

Cooling centrifuge is used for the separation of DNA Molecule from cell with zero-degree temperature. To separate the blood cells & plasma of blood etc.

44. Pocket PH Meter.: -

It is useful in determining the PH of water & other solutions on the field. (When not in Laboratory)

45. Nebular chamber: -

Nebular chamber slide is used to count the RBCO & WBCO of Human being.

46. Hemoglobin meter: -

Hemoglobin meter is used to count / determine the hemoglobin of blood. Sample because Hemoglobin is very important criteria of blood.

47. Stethoscope: -

To count Heartbeat of Human being & Blood pressure, Stethoscope is used.

48. W.B.C. Pipette: -

To collect & measure the blood sample of person for W.B.C. count W.B.C. Pipette is used.

49. R.B.C. Pipette:-

To collect & measure the blood sample of person for R.B.C. count R.B.C. Pipette is used.

50. Dissection box: -

The dissecting equipment is kept in the dissection box, like scissor, needle, percepts, slides, coverslip. All these apparatuses are kept in Dissection box.

51. Dissecting microscope: -

To observe the tissue coarsely dissecting microscope is used to magnify the tissue.

52. Compound Microscope: -

Compound Microscope has magnification power is very high as compared with Dissecting microscope so for fine observation of tissue, the compound microscope is used.

53. Digital Microscope (Trinocular): -

This microscope is to observe tissue by eye as well as image of tissue is also observed on monitor of computer.

54. Double demonstration eye piece: -

In microscope only one person can observe the tissue under microscope but by using double demonstration eye piece. Two persons can observe the same tissue at same time.

55. Salinity Meter: -

Salinity is one parameter of water. To determine the quality of water salinity is measured by salinity meter.

56. Conductivity meter: -

Conductivity is important property of water to measure the conductivity of water the conductivity meter is used.

57. Forceps: -

Big forceps are use to take out the starfish, earthworm from the barrel counting formalin.

58. Plankton net: -

To determine biodiversity of lake the plankton net is useful to collect the planktons from the lake water.

59. Mortar and pester: -

To isolate enzymes from animal tissue & plant tissue

The tissue is grinded in mortar & pester to prepare paste of tissue

60. Aquarium: -

For the toxicity practical, the practical material is fish. The fish are acclimatized in the laboratory for practical in the Aquarium.

61. Slide Cabinet: -

Slide cabinet contains the 10 to 11 slide trays. The slides are kept in the slide tray & all the trays are accommodated in this cabinet.

62. Cavity block: -

Cavity blocks are useful to pass or transfer the tissue through alcohol grade & staining process.

63. Coupling Jar: -

Coupling jars are used to transfer the slide (tissue) in alcohol grade from 10% to 100% & staining the tissue & making permanent slides.

64. Stefan's Constant Apparatus.

Stefan's constant apparatus has been designed to study the Sthefan's law of radiation features- Continually variable, over load and short circuit.

65. Ultrasonic interferometer.

Ultrasonic interferometer is used for to determine velocity of ultrasonic wave's which are travel in water medium.

Exp. Ultrasonic Interferometer.

66. Research optical bench.

It is used for performing experiments of interference, diffraction polarization. It is useful in determination of refractive index of thin material sheets. Used to perform expt. s using LASER and monochromatic sources.

67. Hall Effect apparatus.

Hall effect is a phenomenon shown by solid semiconductors, in which magnetic field and currents are applied or to each other on solid specimen the voltage is developed at right angle. So, this instrument is used to determine the hall voltage.

68. Resistivity of Semiconductor.

Resistivity of semiconductor is determined by using four probe experiment. In this experiment current and temperature are measured.

69. Susceptibility Apparatus.

Magnetic susceptibility apparatus is used to determine the magnetic susceptibility of magnetic materials it is also used to determine type of magnetic material in physic lab.

70. Platinum resistance Thermometer.

Platinum resistance Thermometer is type of thermometer in which temperature is measured as a function of resistance.

71. He-Ne Laser.

He-Ne laser is made up of Helium- Neon material with ratio of 1:1. Out put power from 0.8 mW to 22.5 mW at 632.8nm. it is used for to perform different type of laser experiment.

Exp.: Divergence, diffraction grating, reflection grating.

72. Michelson interferometer.

Michelson interferometer used to obtain fringe pattern. By using this instrument, the existence of ether layer on earth's surface is verified.

73. Maxwell Bridge.

Maxwell Bridge instrument is a bridge of resistance. By using known resistance, we can measure unknown value of resistance.

74.Anderson Bridge.

Andersons Bridge gives the accurate measurement or unknown self-inductance of the circuit in Anderson Bridge the unknown inductance is compared with the standard fixed capacitance.

75. E/m Apparatus.

It is useful for to measure charge / mass ratio of electron. It consists of vacuum tube. Mounted inside a pair of Helmholtz Coils that provide magnetic field.

76. Rydebergs constant Apparatus.

Rydebeg's constant is used for to calculate / determine the value of constant R.

i.e. R = 1.097 □ 107/m

77. Incubator.

Used for drying procen of thin film samples. Useful for projects at T.Y.B.Sc. Physics/ Chemistry.

78. Muffle Furnace.

For Annealing the samples of thin films and None practices about 5000c.

79. Diode Laser.

Diode laser is a semiconductor device similar to digit committing diode in which a diode pumped directly with electrical current which can create lasing action.

Exp.: Grating element, Hollow prism.

80. Planks constant.

Planks constant is useful TV to determine standard value of A (Planks constant) by performing experiment.

h = 6.62 □ 10-34 m2hg/s.

81. DLL Software (Biyani) for Language Laboratory-

In addition to these, there are other equipment's also present. The funds received under special assistance programme from UGC, DST- FIST scheme is used to augment teaching learning facility. The college has made available computers, LCD projectors and internet/ Wi-Fi facility for students. Introduction of number of computers interfaced experiments is the distinct identity of the college in teaching- learning as compared to other colleges in affiliating University area. These equipments are used for teaching- learning as compared to other colleges in affiliating University Ares. This equipment is used for teaching- learning and practical purposes. Scientific Experiments using computer interface is an effort to explain to the students how computer is useful in measuring and controlling physical parameters and processes. In this modern age, use of technology in the classroom and laboratories make learning students centric. Through these students get aquatinted with computing facility and improve their technological skills. Number of students have completed their project work using these interface experiments. Some students have developed equipment as their project work. Teachers use these experiments for research purposes. The college has number of students as rank holders in university exams.

In addition to these, the college faculty through their innovations have developed low cost equipment's for teaching and learning. Faculties have published research articles in reputed international journals.

The college has received funds from DST, UGC for augmentation of learning facilities in campus. College has successfully implemented the activities under DSTFIST scheme.

These efforts in introducing specialized modern infrastructure and technology have strengthened the research with quality learning experiences.

Teachers have presented research papers in national and international conferences.

The faculties have published more than 10 research papers in standard journals with impact factors and UGC approved journals.

During last year, the faculties have 01 ongoing research projects supported by different funding agencies viz. UGC Number of reference books essential for teaching and learning are purchased from funds available from above mentioned schemes.

Due to wide range of research programmes, the SPPU sanctioned funds to organize National Conferences/ Seminars.

The college has successfully organized.

1. National Seminar on, "Academic and Administrative Audit- Too for Higher Education from 21.01.2019 to 22.01. 2019.

2. State level seminar on, "Jansanchar Madhyam aur Hindi" from 19/01/2019 to 20/01/2019.