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വാക്കാട് പി.ഒ
പിൻ: 676 502
തീയതി: 10/08/2017

## ക്വട്ടേഷൻ നോട്ടീസ്

2017-18 സാമ്പത്തിക വർഷത്തിൽ പ്ലാൻ പദ്ധതിയിൽ ലാബ് /ലൈബ്രറികളുടെ വികസനം ശീർഷകത്തിൽ ഈ കോളേജിലെ ഫിസിക്സ് ലാബിലെ ഉപകരണങ്ങൾ റിപ്പയർ ചെയ്യുന്നതിന് തയ്യാറുള്ളവരിൽ നിന്നും മുദ്ര വെച്ച ക്വട്ടേഷനുകൾ ക്ഷണിച്ചു കൊള്ളുന്നു.

റിപ്പയർ ചെയ്യേണ്ട ഉപകരണങ്ങളുടെ ലിസ്റ്റ് കോളേജ് ആഫീസിൽ നിന്നും ലഭ്യമാണ്. ക്വട്ടേഷനുകൾ പങ്കെടുക്കാൻ താല്പര്യമുള്ളവർ കോളേജിലെ ഫിസിക്സ് ലാബ് സന്ദർശിച്ച് വിവരങ്ങൾ മനസ്സിലാക്കി ഓരോ ഉപകരണവും റിപ്പയർ ചെയ്യുന്നതിനാവശ്യമായ തുക രേഖപ്പെടുത്തിയ ക്വട്ടേഷനുകൾ കവറിനു പുറത്ത് "2017-18 വർഷത്തിൽ പ്ലാൻ പദ്ധതിയിൽ ഫിസിക്സ് ലാബിലെ ഉപകരണങ്ങൾ റിപ്പയർ ചെയ്യുന്നതിനുള്ള ക്വട്ടേഷൻ എന്നെഴുതി "പ്രിൻസിപ്പാൾ, ടി.എം.ഗവ. കോളേജ്, തിരൂർ. വാക്കാട്. പി.ഒ, മലപ്പുറം ജില്ല. പിൻ.676 502" എന്ന വിലാസത്തിൽ 30.08.2017 ന് 2.00 മണിക്ക് മുൻപായി കോളേജ് ആഫീസിൽ ലഭിക്കത്തക്കവിധം അയയ്ക്കേണ്ടതാണ്. വൈകി ലഭിക്കുന്ന ക്വട്ടേഷനുകൾ യാതൊരു കാരണവശാലും പരിഗണിക്കുന്നതല്ല. കൂടുതൽ വിവരങ്ങൾ കോളേജ് ആഫീസിൽ നിന്നും പ്രവർത്തി ദിവസങ്ങളിൽ അറിയാവുന്നതാണ്. യാതൊരു മുന്നറിയിപ്പും കൂടാതെ ക്വട്ടേഷൻ നടപടികൾ നിർത്തിവയ്ക്കുന്നതിനോ, റദ്ദാക്കാനോ ഉള്ള അധികാരം താഴെ ഒപ്പിട്ടിട്ടുള്ള ഉദ്യോഗസ്ഥനിൽ നിക്ഷിപ്തമാണ്.

പ്രിൻസിപ്പാൾ
Principal,
T.M. GOVT COLLEGE
TIRUR

To
നോട്ടീസ് ബോർഡ്

പകർപ്പ് :1.ബന്ധപ്പെട്ട സ്ഥാപനങ്ങൾക്ക്
2. ഫിസിക്സ് വിഭാഗം മേധാവി
3. കരുതൽ പ്രതി
4. കോളേജ് വെബ്സൈറ്റ്

# T.M.GOVT. COLLEGE TIRUR

## DEPARTMENT OF PHYSICS

## Indent for the purchase of lab equipments

| Sl No: | Item and specification | Quantity |
|---|---|---|
| 1 | **30 MHz Analog Oscilloscope:**<br>Dual channel,<br>DC-30 MHz bandwidth,<br>1 mV/div sensitivity on both channels,<br>X-Y operation,<br>Vertical deflection coefficients: 1 mV/div to 20 V/div,<br>Time coefficients: 0.5 micro-second/div to 0.2 s/div with 3% accuracy,<br>Variable Hold-off,<br>Built-in component tester,<br>Output socket- BNC<br>Input power: 220 - 240 V, 50/60 Hz.<br>**Accessories required:** Line cord for input power,<br>One pair of suitable co-axial cable with BNC connector at both ends,<br>One pair of suitable co-axial cable with BNC connector at one end and banana plugs with alligator clips at the other end. | 2 |

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| **2** | **Digital Function generator:**<br>Sine, Square, Triangular and Pulse wave forms<br>Frequency range: 1 Hz to 5 MHz (3% accuracy)<br>Output voltage: 10 mV to 20 V<br>Output socket- BNC<br>Input power: 220 - 240 V, 50/60 Hz<br>**Accessories required:** Power cord for input power, One pair of suitable co-axial cable with BNC connector at both ends,<br>One pair of suitable co-axial cable with BNC connector at one end and banana plugs with alligator clips at the other end.<br>**Additional accessories:** BNC Male to 2 BNC Female Jack Adapter T-Shaped Connector 3 Way. | **2** |
| **3** | **Melde's string apparatus:**<br>Electrically maintained tunning fork fixed on a sturdy base. The fork is made of steel. The tunning fork should produce vibrations at a rate 60 per second. The position of the electromagnet should be adjustable so that the amplitude of vibration may be varied. Provision should be there to attach string at the end of the prongs of the tunning fork. The set up should be workable on 220-240 V A. C.<br>**Accessories required:** Silk cord, pulley and scale pan with hook to carry weights for tensioning the cord. Provision should be there to attach the pulley at the end of laboratory table. Suitable transformer for AC source | **1** |

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| **4** | **Scale and telescope arrangement:**<br>The telescope should be mounted on a specially designed carriage with support ring to stop abrupt falling. The carriage should be fitted with two adjustable screws for precise vertical and horizontal positioning. The whole arrangement mounted on a long steel pillar, fitted on a cast iron base with leveling screws. A scale holder with scale should also be fitted vertically on the steel pillar. | **3** |
| **5** | **Resistance box, plug type:**<br>Range: 0.1-5 ohms<br>Enclosed in polished teak wood box with bakelite panel. Split brass contact blocks hold precision cut, interchangeable plug having moulded black bakelite fluted tops. Coils of constantine wire, double silk covered are wound. Coils connected with double nut system. | **3** |
| **6** | **Resistance box, plug type:**<br>Range: 1-10000 ohms<br>Enclosed in polished teak wood box with bakelite panel. Split brass contact blocks hold precision cut, interchangeable plug having moulded black bakelite fluted tops. Coils of constantine wire, double silk covered are wound. Coils connected with double nut system. | **10** |

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| **7** | **Rheostat:**<br>Resistance: 30 ohm,<br>Current capacity: 0.5 ampere<br>Wound with heavily oxidized resistance wire on vitreous enameled steel tube. The winding is locked into place with ceramic cement. The tube is carried upon robust enameled diecast end supports with heavy duty sliding contact consisting of phosphor bronze strips, nickel plated for corrosion resistance. 4 mm socket terminals are fitted, allowing for use as a variable resistor or potential divider | **3** |
| **8** | **Rheostat:**<br>Resistance: 1000 ohm,<br>Current capacity: 0.5 ampere<br>Wound with heavily oxidized resistance wire on vitreous enameled steel tube. The winding is locked into place with ceramic cement. The tube is carried upon robust enameled diecast end supports with heavy duty sliding contact consisting of phosphor bronze strips, nickel plated for corrosion resistance. 4 mm socket terminals are fitted, allowing for use as a variable resistor or potential divider | **2** |
| **9** | **Rheostat:**<br>Resistance: 600 ohm,<br>Current capacity: 0.6 ampere<br>Wound with heavily oxidized resistance wire on vitreous enameled steel tube. The winding is locked into place with ceramic cement. The tube is carried upon robust enameled diecast end supports with heavy duty sliding contact consisting of phosphor bronze strips, nickel plated for corrosion resistance. 4 mm socket terminals are fitted, allowing for use as a variable resistor or potential divider | **2** |

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| **10** | **Electronic Daniel cell:**<br>Output Voltage: 1.08V, DC<br>Current: 10mA<br>Operating in 220-240 AC mains | **5** |
| **11** | **Green Board:**green writing board with Vitreous enameled steel sheet top surface. 4 feet X 8 Feet | **2** |
| **12** | **Dual output DC REGULATED power supply:**<br>Continuously variable output by COARSE and FINE knobs in each track,<br>digital displays for voltage and current for each track, protection against short circuits and continuous overloads. Floating output with respect to ground has been provided . The same power supplies can be used as dual independent type also.<br>Voltage range: 0 to +/- 30 V<br>Current range: 0 to 3 ampere | **1** |
| **13** | **Single Output DC regulated power supply:**<br>Continuously variable output by COARSE and FINE knobs,<br>digital displays for voltage and current,<br>protection against short circuit and continuous overloads.<br>Voltage range: 0 to 30 V<br>Current: 0 to 3 ampere | **2** |
| **14** | **Laser diffraction kit:**<br>Suitable to study the single slit diffraction pattern.<br>Laser source: 625 nm, 0.5 milli-Watt with adjustable stand, micrometer adjustable slit which can be attached to the laser source, white screen.<br>Input power to the laser source: 220-240 V, 50/60 Hz (A. C. mains) | **2** |

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| **15** | **Electronic balance:**<br>Capacity: 0 - 500 gram<br>Reading precision: 0.01 gram,<br>Stainless steel pan, Auto power off, Low battery indication, Removable draught shield,<br>Display: LCD, 6 digits,<br>Power: 220-240Volts, 50/60Hz<br>**Accessories required:** Suitable AC adaaptor | **1** |
| **16** | **Lenses** : focal length 10cm | **10** |
| **17** | **Plano Convex lens:**focal length 100cm | **6** |
| **18** | **Diffrction grating:**<br>15000 lines per inch, Size: 38 x 50 mm | **5** |
| **19** | **Spectrometer prism:**<br>Optically worked for Spectrometer,<br>equilateral prism with two faces polished.<br>Crown glass<br>size: 32 x 32 mm | **12** |
| **20** | **Hollow prism** | **5** |
| **21** | **Calcite prism** | **2** |
| **22** | **Quartz prism :** for spectrometer experiment | **2** |
| **23** | **Small angle prism for spectrometer:**<br>optically worked,<br>size: 32 mm x 32mm,<br>Angle: 10 degree X 85 degree X 85 degree | **5** |
| **24** | Laser pointer with slide changer: Effective range - 20 meters minimum<br>· 2.4 GHz wireless technology<br>· Provision of Laser pointer<br>· LCD display with timer<br>· Receiver, carrying case, Batteries, manuals are to be provided along with the<br>wireless presenter. | **1** |
| **25** | **collar mic:** | **1** |

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| **26** | **0.45 mm thick single strand double cotton covered copper wire (DCC wire):** 0.45 mm, for laboratory use, wound on a reel | **500 grams** |
| **27** | **Connecting wires for breadboard :**Blue, Green, Black Yellow | **10 cm each** |
| **28** | **Connecting wires with crocodile pin at both ends-** Red, Black-50cm | **100 each** |
| **29** | **Melde's string apparatus:** Electrically maintained tunning fork fixed on a sturdy base. The fork is made of steel. The tunning fork should produce vibrations at a rate 60 per second. The position of the electromagnet should be adjustable so that the amplitude of vibration may be varied. Provision should be there to attach string at the end of the prongs of the tunning fork. The set up should be workable on 220-240 V A. C. **Accessories required:** Silk cord, pulley and scale pan with hook to carry weights for tensioning the cord. Provision should be there to attach the pulley at the end of laboratory table. Suitable transformer for AC source | **2** |
| **30** | **Potentiometer:** 10 m wire fixed on a polished Teakwood base, Sunmica base insulation under the wires, knife edge jockey | **2** |
| **31** | **Spectrometer:** Instrument for studying optical spectra. It consists of a collimator, a telescope, a circular prism table and a graduated circular scale along with two vernier tables, levelling screws, adjustment screws, clamp screws,focus knobs and magnifying glass to read vernier | **2** |

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| **32** | **Travelling Microscope:** It consists of a compound Microscope mounted vertically or horizontally on a right metal frame so that it can be moved in a direction at right angles to its axis by means of a screw. The displacement of microscope is measured with verniers which moves with the microscope along a scale fixed to the instrument. | **2** |
| **33** | **Horse shoe magnet:** | **4** |
| **34** | **Semiconductor laser with optical fibre kit** | **2** |
| **35** | **Sodium vapour lamp with lamp house and transformer:**<br>35 watts sodium vapour lamp suitable for spectroscopy experiments,<br>The lamp enclosed in a wooden house made of teakwood with lamp holder and wire fitting,<br>wooden box having long slits on all the four sides,<br>Transformer suitable for driving the sodium vapour lamp, operating on AC Mains: 220- 240V, 50/60Hz | **2** |
| **36** | **Mercury vapour lamp with with lamp house and transformer:**<br>Mercury vapour lamp rated 80 watts,<br>Specially designed lamp house and transformer operating on 220-240Volts, 50/60Hz for driving the lamp, Lamp house comprising a cylindrical sheet metal enclosure closed at one end with a circular aperture for lamp output and lamp holder and wire fitting, Lamp house mounted on a vertical support rod with convenient vertical adjustment in the lamp house position. | **2** |

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| **37** | **Digital multimeter(LCR):**<br>DC voltage: 0 to 1000 V in five ranges,<br>AC volage: 0 to 750 V in five ranges,<br>DC current: 0 to 10 amperes in five ranges,<br>AC current: 0 to 10 amperes in five ranges,<br>Resistance: 0 to 200 mega ohms in seven ranges,<br>Capacitance: 1 nano- 200 micro-Farad,<br>Frequency: 1 Hz to 30 MHz,<br>Temperature: - 40 degree to 1000 degree celcius.<br>Functions like diode test, hFE test, continuity test,<br>Low battery indication, Auto power off<br>**Accessories required:** Test Leads, Battery, Temperature Probe. | **4** |
| **38** | **AC Ammeter: 0-10mA** | **10** |
| **39** | **AC Ammeter: 0-150mA** | **10** |
| **40** | **AC Ammeter: 0-100mA** | **10** |
| **41** | **AC Voltmeter: 0-10V** | **10** |
| **42** | **AC Voltmeter: 0-1V** | **10** |
| **43** | **AC Voltmeter: 0-25V** | **10** |
| **44** | **Oscillator Kit: Colpit Oscillator** | **3** |
| **45** | **Oscillator Kit: hartley Oscillator** | **3** |
| **46** | **Hibbert's Magnetic Standard (HMS):** | **3** |
| **47** | **Variable Capacitor (Tuning):** | **5** |
| **48** | **Variable Inductor(Tuning):** | **5** |
| **49** | **Diffrction grating:**<br>15000 lines per inch, Size: 38 x 50 mm | **8** |
| **50** | **Spectrometer prism:**<br>Optically worked for Spectrometer,<br>equilateral prism with two faces polished.<br>Crown glass<br>size: 32 x 32 mm | **8** |
| **51** | **Variable pot resistor: 10Kohm, Kohm, 1K ohm, 5K ohm** | **10 each** |

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| **52** | **Thermocouple: Cromel-Alumel, Cromel-Constantan, Copper-Constantan,Iron-Constantan** | **1 Each** |
| **53** | **NPN Transistor: BC 107 ( β above 100)** | **50** |
| **54** | **Temperature coefficient coil:**<br>Resistance coil enclosed in test tube suitable for the measurement of temperature coefficient of resistance,<br>Resistance: 10 ohms | **10** |
| **55** | **Step down transformer(AC Source):** 0-10V ,2A , | **6** |
| **56** | **Step down transformer(AC Source):** 0-6V ,1A , | **6** |
| **57** | **NPN Transistor:** BC 107 ( β above 100) | **25** |
| **58** | **Resistors:** 47KΩ, 470KΩ, 150KΩ, 5.6KΩ, 1.5KΩ, 2.2KΩ, 50KΩ, 10KΩ, 33KΩ, 1KΩ, 330KΩ, 4.7KΩ, 100KΩ | **25 Each** |
| **59** | **Capacotor:** 100µF, 200µF, 0.1µF, 1 µF,10µF, 0.22µF, .47µF, .01µF, .001µF | **25 Each** |
| **60** | **Beaker: 100ml, 250ml** | **5 Each** |
| **61** | **IC : 741, 7400 , 7402 ,** | **50 each** |
| **62** | **Bread Board** | **35** |
| **63** | **Diode :** IN 4001, IN 4007 , IN 4002<br>**Zener diode:** IN753(Vz=6.2V) , IN 752(Vz=5.6V)<br>**LED:** Red,Blue, Green,White | **25 Each** |
| **64** | **Chargeable LED table lamp** | **4** |
| **65** | **Thermos Flask:** | **1** |
| **66** | **Screw Driver Set** | **1** |
| **67** | **Rubber tube& cork for surface tension experiment** | **6** |

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| **68** | **Insulation tape- Red,Blue, Black** | **5 Each** |
| **69** | **Mercury** | **100ml** |
| **70** | **Plane mirror for liquid lens experiment** | **10** |
| **71** | **Burette:** | **6** |
| **72** | **Optical Fibre Kit:** | **2** |
| **73** | **Polarimeter:**<br>Consists of two Nicol prisms , convex lens, glass tube, a half shade,an eye piece, all enclosed in a chamber, second nicol prism(analyser) , capable of being rotated and is provided with circular scale and vernier. | **2** |
| **74** | **Pottassium permanganate crystal** | **100gm** |
| **75** | **pottassium Chloride** | **200gm** |
| **76** | **MATLAB** | |
| **77** | **External Hard disc : 1TB USB** | **1** |
| **78** | **Laptop: High quality laptop HP**,**39.6 cm (15.6) HD SVA Display**,**Intel® Core™ i3-6006U** (2 GHz, 3 MB cache, 2 cores), FreeDOS 1.2, **4 GB DDR4-2133 SDRAM** (1 x 4 GB), **Intel® HD Graphics 520**,1 TB 5400 rpm SATA, **Full-size island-style keyboard with integrated numeric keypad**, T**ouchpad with multi-touch gesture support**,**4-cell,41 Wh Li-ion Battery**,**HP TrueVision HD Camera with integrated digital microphone,Dual speakers; DTS Studio Sound™ with two year warranty** | **1** |
| **79** | **copper sulphate** | **500gm** |
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