



**DHARMSINH DESAI UNIVERSITY**  
NADIAD 387001.

Website: [www.ddu.ac.in](http://www.ddu.ac.in)

**TENDER NOTICE**

Quotations are invited for the purchase of electrical equipment required for the electrical machine laboratory of Department of Electronics & Communication, so as to reach the undersigned on or before 22/08/2016.

(Dr. H. M. Desai)  
Vice Chancellor

The specifications are hereunder

**Item Name- MOTOR - ALTERNATOR SET UP**

**Technical Specifications:**

**Machine Specifications:**

- 5 HP / 220 V / (19 Amp +/- 10%) / 1500 RPM / Shunt Wound / **ABB / KIRLOSKAR / SIEMENS / BENN** DC Motor coupled to 3 KVA / 415 V / 4.2Amp. +/- 10 % amp / 3 Phase / 1500 RPM / 50 Hz. / 4 Pole / Rotor Excited / Stator Wound – star connected 4 wires brought out / Separately excited / Manually Regulated/ **ABB/KIRLOSKAR/SIEMENS/BENN** Salient Pole type Alternator with base and couplings with the provision of mounting proxy sensor.
- Voltage regulation for Alternator from Rated Load to No Load may be within 12% at UPF.
- Both rotating machines should be Horizontal Foot Mounted / Ins. Cl. 'B' / Self fan cooled / screen protected drip Proof (SPDP)/ Continuously rated at rated RPM / protection IP22 / Single shaft extended / conforming to IS 4722 and IS325.
- Armature should be mechanically balanced to minimized vibration.
- All Machines should be provided with educational type binding posts.
- Coupled set must be mounted on a fabricated common 'C' channel heavy base & must be coupled with each other by Love joy type flexible couplings. Sheet metal coupling guard should be provided for safety.
- Foundation Drawing required.
- OEM Testing report with all ratings mention above should be required with company seal & sign. at the time of delivery.

**Control Panel Specifications:**

- 1 No 3 Point Starter. (L&T/Siemens/ JBL/ Jeevan Make)
- 2 Nos Digital 300V DC Voltmeter, Accuracy Class 1, Size 96X96 mm , Aux. supply 230V AC (AE, MECO, Rishabh, Delta, Elmeasure). Connections are brought out with BTI 30 Connectors and meter range notations are printed Auxiliary supply is provided through EMI filter
- 1 No Digital 20 A DC ammeter with 75mV shunt, Accuracy Class 1, Size 96X96 mm, Aux. supply 230V AC (AE, MECO, Rishabh, Delta, Elmeasure). Connections are brought out with BTI 30 Connectors and meter range notations are printed Auxiliary supply is provided through EMI filter
- 2 Nos Digital 5 A DC ammeter with 75mV shunt, Accuracy Class 1, Size 96X96 mm , Aux. supply 230V AC (AE, MECO, Rishabh, Delta, Elmeasure). Connections are brought out with BTI 30 Connectors and meter range notations are printed Auxiliary supply is provided through EMI filter
- 1 No Digital 10 A AC Ammeter Accuracy Class 1, Size 96X96 mm, Aux. supply 230V AC (AE, MECO, Rishabh or Equivalent Make). Connections are brought with BTI 30 Connectors and meter range, notations are printed Auxiliary supply is provided through EMI filter

- 1 No Digital 600 V AC Voltmeter, Accuracy Class 1, Size 96X96 mm , Aux. supply 230V AC (AE, MECO, Rishabh or Equivalent Make).Connections are brought out with BTI 30 Connectors and meter range notations are printed Auxiliary supply is provided through EMI filter
- 1 No Digital 3phase/2E, UPF Wattmeter, Accuracy Class 1, Size 96X96, Aux. supply 230V AC (AE, MECO, Rishabh, Make) Connections are brought out with BTI 30 Connectors and meter range notations are printed Auxiliary supply is provided through EMI filter
- 1 No Wire wound Field Rheostat 200Ω/1.7 Amp. (Inbuilt Potentiometer type), must be wound on ceramic ring. (Stead/ Toshniwal/Sure/ Pankaj Make)
- Inbuilt variable DC Excitation for Alternator Field. 0-220V DC / 2Amp. Min. with fuse protection.
- Non contact Tachometer with Proximity Sensor (Speed meter) Digital RPM meter (Selectron / Agronic / Hotek / AE) is fitted on the panel and connections are directly given to the RPM sensor (Proximity) which is mounted on machine shaft.
- BTI 30 Terminals for easy connection & safety. (Elcom, Calyx, Prime or Equivalent Make).
- Rotary switch 32 Amp. for Mains DC ON-OFF & 6Amp. for DC Excitation ON – OFF. (L&T, Hiksons or Equivalent Make).
- Thyristor control, close loop DC power supply 220 V / 25Amp. min.
- **Panel Input 3phase neutral**
- 1No Cooling Fan (4 inch) in top of the panel to remove heat from it.
- Educational type insulated colored terminals.
- All other indicators, terminals, patch cords and switches required of standard reputed make.

#### Accessories:

- For resistance:- (**Required for Load Test & 0.8PF direct loading test**)  
3phase Resistive Load Trolley / 415 V / Six terminals brought out for Star – Delta connection / 10 Amp. / wire wound Resistive Load Trolley / Current rating per phase 5 Amp. / Suitable Three Pole MCB or Rotary Switch for Mains ON – OFF / Load Trolley should have provision to use as 1Phase also. Trolley must be highly powder coated and mount on caster wheel for easy movement..

#### Additional Accessories:

- 3 Nos panel stand table (size – 4 feet \* 3 feet \* 3 feet )
- 1 No 3 point starter (Make- JBL (Benn))
- 1 No rheostat (range-330 ohm, 1.4 A) (potentiometer type) (Make-Stead)
- 1 No digital thermometer (Make-Metravi, Model – DTM 901 ) 3-1/2 Digits, Dual Channel Input, Measures from -50 to 1300°C / -50 to 1999°F, Contact type, to be used with K type thermocouple with backlit display and kelvin scale.
- 100 Nos dual side banana male connectors having appropriate wire length.
- 1 No digital tachometer (Make-Metravi, Model-DT2235)

#### Features:

- Panel should be made of 16 SWG MS Sheet with printed Poly Vinyl facia and laminated.
- Institute logo should be printed on top left corner of the panel.
- Panel should highly laminate with Siemens gray powder coated with proper gasket fitted door & locking system at back side of panel.
- External connections should be made according to the circuit diagram with the help of patch cords/shrouded 4 mm banana male connector.
- Necessary notations for all meters should be printed on the panel.
- Supply and control cables from machine to panel should be housed in flexible hose pipe.

**Learning Support:**

- Operating manual in softcopy & hardcopy with detail experiment procedure, circuit diagram, observation table.
- To Find Regulation of Alternator by Synchronous Impedance method. (OC & SC Test of Alternator)
- To perform Load Test on Alternator (**Required Resistive Load Externally**)

**Terms and Conditions:****Quantity: 1****Warranty: 3 Years (On Site).**

Customers' Certificates indicating satisfactory performance of the similar products and after sales service may add to the merit of the quotation.

**Payment : 100% after delivery and successful installation.**

**The prices must be quoted for Motor-Alternator set-up including all necessary accessories and components.**

**The prices quoted must include installation charges if any.**

**The quotation will be evaluated on total cost of the item.**

**VAT should be specified clearly.**

**F.O.R: Dharmsinh Desai University, Nadiad**

**The quotation should be sent to following address in sealed cover, super scribing "Department of Electronics & Communication".**

**The Vice Chancellor  
Dharmsinh Desai University,  
P.O.Box No. 35, College Road,  
Nadiad- 387001**

**Last date of submitting quotations is 22-08-2016**