

S.No.	Item Name	Specifications
1.	Complete setup to determine V-curves and inverted V-curves of a three phase synchronous motor.	<p>Complete setup to determine V-curves and inverted V-curves of a three phase synchronous motor.</p> <p><b>MACHINE REQUIRED-</b> Synchronous Motor 3HP Induction Start with Built in DC Exciter coupled with 1.5KW, 220V, DC Generator with control panel</p> <p><b>CONTROL PANEL</b> It consist of nicely powder coated M.S. fabricated box with screen printed circuit will be fitted on the Bakelite sheet panel with duly marked termination and also back door of the panel will have lock facility for safety of panel. Control Panel consist of following accessories</p> <p><b>For Synchronous Motor:</b> Analogue Ammeter (0-10A) M.I. Type Analogue Voltmeter (0-500V) M.I. Type M.C.B. Rheostat 3000hm, 1A. 3Phase Power Factor meter 96x96mm Analogue type. D.O.L. Starter. Excitation switch Fuses.</p> <p><b>For DC Generator:</b> DPST Switch. Analogue Voltmeter (0-300V) M.C. Analogue Ammeter (0-15A) M.C. Rheostat 3000hm, 1A (1 Pc).</p> <p><b>For Excitor:</b> Analogue Voltmeter (0-300V) M.C. Analogue Ammeter (0-2A) M.C.. Rheostat 15000hm, 0.5A <b>With all other accessories required as per experiment</b></p>

INVITATION LETTER

NO/NGEC/EE/2019-20/167)

Sagar, Date: 10/07/2020

To

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SUBJECT: Invitation for quotation for supply of goods.

*Material/goods for*

*Electric Machine and*  
*Electrical Equip Dept, IGEC Sagar*

Dear Sir,

1. You are invited to submit your most competitive quotation for the following goods with item wise detailed specifications given at Annexure I.

S.No.	Brief Description	Quantity	Delivery period (in Days)	Place of delivery	Installation Requirement
1.	Three phase Synchronous motor setup	01	One month	Indira Gandhi Engineering college, Jabalpur road, Sagar- M.P.	Yes
2.	Setup for Synchronization of Alternators	01	One month	Indira Gandhi Engineering college, Jabalpur road, Sagar- M.P.	Yes
3.	Setup to obtain 3-phase to 2-phase conversion by scott connection	01	One month	Indira Gandhi Engineering college, Jabalpur road, Sagar- M.P.	Yes
4.	Cut section model of 3-Phase squirrel cage induction motor	01	One month	Indira Gandhi Engineering college, Jabalpur road, Sagar- M.P.	Yes
5.	Cut section model of DC motor shunt/Compound wound	01	One month	Indira Gandhi Engineering college, Jabalpur road, Sagar- M.P.	Yes
6.	Cut section model of transformer (3 Phase-Core Type)	01	One month	Indira Gandhi Engineering college, Jabalpur road, Sagar- M.P.	Yes
7.	Cut section model of alternator (3-Phase)	01	One Month	Indira Gandhi Engineering college, Jabalpur road, Sagar- M.P.	Yes

2. Qualification Criteria: The bidder/ supplier should have -

I. Valid GST number is compulsory.

II. A minimum of three years experience of supplying similar items.

III. A turnover of Rs. 50 lacs at least once in last three years.

*Ravi*

*AV*

3. Quotation-

3.1 Corrections, if any, shall be made by crossing out, initialing, dating and re writing.

3.2 Applicable taxes shall be quoted separately for all items.

3.3 The prices should be quoted in Indian rupees only.

4. The quotation should include the following information-

i. The copies of original documents defining the constitution or legal status, place of registration and principal place of business of the company firm or partnership etc in India.

ii. Report on financial status.

iii. Authorization certificate from the OEM (If bidder or supplier is not an OEM) assuring full guarantee and warranty obligations during the liability period, for the goods offered.

5. Evaluation of quotations,  
The purchaser will evaluate and compare the quotations determined to be substantially responsive i.e. which

5.1 are properly signed ; and

5.2 confirm to the terms and conditions, and specifications.

6. **The quotations would be evaluated for all items together.**

7. Award of contract;

The purchaser will award the contract to the bidder whose quotation has been determined to be

substantially responsive and who has offered the lowest evaluated quotation price.

7.1 Notwithstanding the above, the purchaser reserves the right to accept or reject the any quotation and to cancel the bidding process and reject all quotations at any time prior to the award of contract.

8. All items should be of standard make.  
9. Information brochures/Product catalogue, If any must be accompanied with the quotation clearly indicating the model quoted for.

10. Number of Items may be decrease or may be cancelled up to any extent.

11. Payment shall be made after satisfactory Installation.

12. All supplied items are under warranty of 24 months from the date of successful acceptance of items.

13. You are requested to provide your offer latest **by 17:00 hours on July 24, 2020**

14. Detailed specifications of the items are at Annexure - I.

15. Training Clause- Training on operation and handling of equipment .....free of cost.

16. Testing/Installation - Full installation and testing /demonstration ..... Free of cost.

17. All disputes with regard to the purchase of material /Equipment etc. will be subject to the jurisdiction of Sagar M.P.

Principal,

Indira Gandhi Engineering College

Sagar-M.P.

## 2. Setup for Synchronization of Alternators

### Setup of Synchronization of Alternators TO STUDY THE SYNCHRONIZATION OF AN ALTERNATOR WITH INFINITE BUS BY

#### (I) DARK LAMP METHOD.

(II) BRIGHT LAMP METHOD:  
MACHINE REQUIRED:  
DC shunt motor 3 HP 220V directly coupled to synchronous generator  
2KVA separately excited on common MS channel base. 2 sets.

#### NOTE:-FOR SYNCHRONIZATION WE REQUIRE 2 SETS.

**SYNCHRONIZING CONTROL PANEL:**  
It consist of nicely powder coated M.S. fabricated box with properly engraved circuit will be fitted on the Bakelite sheet panel with duly marked termination and also back door of the panel will have lock facility for safety of panel.

Control Panel consist of following accessories:-

#### FOR DC MOTOR-

1. In built DC power supply 0-220V DC output
2. M.C Voltmeter 96 x 96sq, mm. 0-300V -2Nos
3. MC Ammeters 96 x 96mm 0-20A -2nos.
4. Rheostat 1A, 300ohms -2Nos.
5. DPIC, 16A, 240V -2Nos.
6. DC starter 3point face plate type suitable for above motor -2Nos.
7. Indicating Lights.
8. Insulating terminals.

#### FOR AC GENERATOR-

1. M.I. Voltmeter 96 x 96sq, mm. 0-500V - 2Nos.
2. MI Ammeters 96 x 96mm 0-5A -2nos.
3. Frequency vibrating reed type 96 x96xsq. mm
4. Phase sequence indicator, 96 x96 sq. mm
5. Bulb with holder -6nos.
6. Synchroscope 144 x 144sq mm suitable for 440V AC operation panel type
7. Trippl pole, Double throw Knife switch
8. M.C.B 6A, 3pole -2nos.
9. Excitation controlling arrangement -2nos.
10. Insulating Terminals for both the machines.

#### FOR DC EXCITATION-

1. M.C. Voltmeter 96 x 96sq, mm. 0-300V -2Nos.
2. M.C.B Double pole 6A -2nos.

**Extra accessories required for experimentation supplied along with the trainer**

Rheostat 270 ohm 1.7 A - 4 Nos.

3 phase resistive load 5KW - 1 Nos.

3 phase inductive load 10A - 1 Nos.

3 phase capacitive load 10A - 1 Nos.

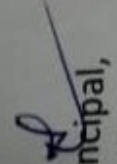
**With all other accessories required as per experiment**

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3.	Setup to obtain 3-phase to 2-phase conversion by Scott connection	<p>Complete setup to obtain 3-phase to 2-phase conversion by Scott connection  <b>TO OBTAIN 3 PHASE TO 2 PHASE CONVERSION BY SCOTT CONNECTION, EQUIPMENTS REQUIRED</b>          Two Nos. 1 Phase Transformer 1KVA 230/230V with Taping at 50%, 86.6% &amp; 100% housed in steel box with educational type Terminals provided. "  <b>CONTROL PANEL</b>          It consist of nicely powder coated M.S. fabricated box with engraved and also back door of the panel will have lock facility for safety of panel.          Control Panel consist of following accessories:-          M.C.B.          Analog Ammeter (0-10A) MI type (5 Pc).          Analog Voltmeter (0-300V) MI type (1 Pc).          3Phase Voltmeter (0-600V) MI type (1 Pc).          Electrical Auto Transformer 5KVA.(1Pc)          Educational type insulated coloured terminals.  <b>With all other accessories required as per experiment</b></p>
4.	Cut section model of 3-Phase squirrel cage induction motor (Complete Setup)	<p>Cut out model of 3 phase squirrel cage induction motor, consisting of quarter cut section, including shaft of the enclosed cover to show the constructional details of the motor, Ratings: class 'B' Insulation, DOL Starter.</p>
5.	Cut section model of DC motor shunt/Compound wound (Complete Setup)	<p>Cut model of D.C. Motor Shunt/compound wound, consist of Quarter cut section of the enclosed Cover to show the constructional details of the Motor.</p>
6.	Cut section model of transformer (3 Phase-Core Type) (Complete Setup)	<p>Dc motor, 1 Hp, 230 V, Insulation class 'B', DC starter suitable for above</p>
7.	Cut section model of alternator (3-Phase) (Complete Setup)	<p>Cut Model of a 3 Phase, core type distribution transformer, consisting of a provision of showing the construction and working of various parts, Transformer 3 Phase 1 KVA, 440/220 V, 50 Hz, natural air cooled.          Cut section model of 3-Phase alternator, consisting of Quarter cut section, including Shaft of the enclosed cover to show the constructional details of the Alternator, such as Armature, poles and their winding details, shaft with Sliprings, Alternator 1 KVA, 3 phase, 415V, 4 wire, Star connected.</p>

  
Principal,



Indira Gandhi Engineering College  
Sagar-M.P.