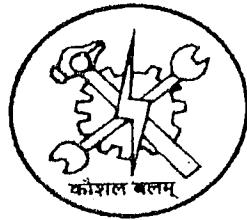


SYLLABUS



ON

TRADE TECHNOLOGY -I 3-MONTHS MODULE

FOR

FARM MECHANIC.

FOR

CRAFT INSTRUCTOR TRAINING SCHEME.

List of members attended the workshop for designing the syllabus on
“ TRADE TECHNOLOGY (TT-I)” for **FARM MECHANIC** under
Craft Instructor Training Scheme on 29.05.2009 at ATI Gill Road
Ludhiana.

| Sl. No | Name of member & Designation S/Sri... | Representing Organization with address | |
|--------|--|---|----------|
| 1 | Dinesh Kumar Nijhawan, Director | ATI, Ludhiana | Chairman |
| 2 | C.P.Sharma, Jt. Director | ATI, Ludhiana | Member |
| 3 | Sukhdev Singh , DDT | ATI, Ludhiana | Member |
| 4 | Gurcharan Singh, ADT | ATI, Ludhiana | Member |
| 5 | P.S. Kharbanda, Ex.ADT | ATI, Ludhiana | Member |
| 6 | Jagdish Singh, ADT | ATI, Ludhiana | Member |
| 7 | Munish Rattan, Lecturer | GNE College ,Ludhiana. | Member |
| 8 | Hardev Singh Sodhi, Ex.C.I.(Tractor Mech) | ITI Ludhiana | Member |
| 9 | Jagdev Singh Grewal, Ex.C.I.(MMV) | ITI Ludhiana | Member |
| 10 | Vipan Kumar, Trg. Officer | ATI, Ludhiana | Member |
| 11 | Harbans Lal ,Trg. Officer | ATI, Ludhiana | Member |
| 12 | Balwinder Singh ,C.I.(Tractor Mech.) | ITI,Manuke, Ludhiana. | Member |
| 13 | V.K. Grover , AGM | HMT Ltd. Pinjore | Member |
| 14 | .Ankit, Research Associate | Dept. of Farm Power & Machinery PAU , Ludhiana. | Member |
| 15 | Parmod Kumar , C.I. | ITI Ludhiana | Member |
| 16 | Harbans Singh,Trg. Officer | ATI, Ludhiana | Member |
| 17 | M.R.Sharda, Trg. Officer | ATI, Ludhiana | Member |
| 18 | Sanjiv Kumar, V.I. | ATI Ludhiana. | Member |

Available Sessions:

1. Monday to Friday 5 days x 8 Sessions = 40 Sessions
(Each Session of One Hour duration)
2. Total Session : 40 x 13 = 520 Sessions
3. Admission & Final Test: = 40 Sessions.
4. Industrial visit = 40 Sessions.
5. Available Sessions = 520 – 80 = 440 Sessions.
6. Practical = 264 Sessions
Theory = 176 Sessions.

Evaluation Scheme: -

| | | Maximum Marks | Pass Marks |
|----|-----------|---------------|------------|
| 1. | Theory | = 100 | 60 |
| 2. | Sessional | = 50 | 30 |
| 3. | Practical | = 200 | 120 |
| 4. | Sessional | = 50 | 30 |
| | Total | = 400 | 240 |

SYLLABUS FOR THE INSTRUCTOR'S COURSE IN FARM-MACHANIC

Trade Technology - I

| Sr. No. | Week No. | Theory | Practical |
|---------|----------|--|---|
| 1 | 1 | <ul style="list-style-type: none">• Introduction to the trade curriculum.• Importance of the trade in the advancement of Agriculture technology in the country.• Types of tractor.• Different systems of tractor.• Technical term used in tractor• Major dimension of tractor.• Types of engine, working & its components.• Types of systems used in engine. | <ul style="list-style-type: none">• Importance of safety precautions to observed in the section.• Identify different systems of tractor.• Servicing & tuning of the engine• Measuring the dimension of tractor.• Hitching practice of trailed implements.• Hitching practice of implements with three point linkage system.• Fault finding. |
| 2 | 2 | <ul style="list-style-type: none">• Types of tillage & their uses.• Working principles of ploughs.• Constructional details.• Workshop adjustments.• Method of hitching.• Importance of weight transfer.• Considerations while using mounted and semi mounted implements.• Methods of field operation.• Recommended speeds for operation. | <ul style="list-style-type: none">• Servicing of MB plough.• Measuring Horizontal & Vertical suction.• Servicing of disc plough.• Measuring disc & tilt angle of disc plough.• Workshop adjustments of ploughs.• Hitching of ploughs.• Method of ploughing.• Field operation & adjustments.• Faults and remedies. |
| 3 | 3 | <ul style="list-style-type: none">• Types of cultivator.• Constructional details & uses• Common types of shovels & sweeps.• Types of harrows.• Constructional details & uses.• Setting and adjustments.• Field operations & adjustments.• Difference between disc harrows & drag harrow.• Difference between disc harrows & disc plough. | <ul style="list-style-type: none">• Servicing of cultivator• Setting of cultivators with the help of floor diagram.• Servicing of harrows.• Measuring gang angle.• Workshop adjustments.• Field operation & adjustments of cultivator/harrows.• Field operation & adjustments.• Faults and remedies. |

| | | | |
|----|----|--|---|
| 7 | 7 | <ul style="list-style-type: none"> • Types of sprayers & dusters. • Calibrations. • Method of operation. • Common prime movers. • Types of weed control. • Methods of weeds control. • Equipment used for their applications. • Types of power tillers & uses • Precautions in handling weedicide. • Care & maintenance. | <ul style="list-style-type: none"> • Dismantling and assembling sprayer. • Repairs and adjustments. • Calibrations of sprayer. • Dismantling and assembling duster • Repairs and adjustments. • Servicing of fogging machine. • Adjustments of a cultivator for intercultur acc. to crop • Servicing of weeder/ power tiller. • Field Operation & adjustments. • Troubles and remedies. |
| 8 | 8 | <ul style="list-style-type: none"> • Types of reaper & straw-reaper. • Constructional details, functions. • Types of threshers , maize Sheller and ground nut decorticators. • Constructional details. • Prime movers and driving systems. • Precautions in transporting. • Care & maintenance. | <ul style="list-style-type: none"> • Servicing of reaper & straw-reapers. • Cutter bar adjustments. • Field operation. • Dismantling and assembling thrasher. • Servicing of maize Sheller. • Servicing of ground nut decorticator. • Hitching and fitting with prime mover. • Adjusting and operating in field. • Faults finding. |
| 9 | 9 | <ul style="list-style-type: none"> • Purpose of combine. • Advantages and limitations. • Types of combines. • Types of threshers used in combine • Power transmission and drives. • Flow path material. • Adjustments of combines for different crops. • Method of field operation. • Precautions while operating in the field. • Common accidents and their prevention. | <ul style="list-style-type: none"> • Servicing of different systems of combine harvester. • Checking and repairing the cutter bar assembly. • Checking and repairing the feeding assembly. • Checking and repairing of thresher cylinder & concave. • Method of transportation. • Fitting of cutter bar with feeder. • Field operation of wheat crop. • Field operation of paddy crop. • Adjustment of Harvester acc. to crop. • Trouble shooting and remedies. |
| 10 | 10 | <ul style="list-style-type: none"> • Need of green harvesting equipment. • Types of harvesting equipment. • Function and working of movers, hay-bailer & fodder. • Working of chaff-cutter. | <ul style="list-style-type: none"> • Servicing of mover. • Servicing of rotary harvester. • Servicing of haybailer. • Servicing of fodder. • Servicing of chaff-cutter. • Attachment with prime mover. |

LIST OF TOOLS & EQUIPMENTS FARM –MACHANIC

Trade Technology - I

| Sl. No. | Item/ Specification | Quantity for batch of 20 trainees |
|---------|--|-----------------------------------|
| 1. | Trainees Tool Kit | 11 Nos. |
| 2. | Steel tools box with lock and key size 400x200x150 mm 8 droze locker | 3 Nos. |
| 3. | Screw driver Philips type set of 5 pieces (100 mm to 300 mm) | 11 set |
| 4. | Screw driver 15cm x 9mm. Blade | 11 Nos. |
| 5. | Screw driver 20cm x 9mm. Blade | 11 Nos. |
| 6. | Screw driver 30 cm X 9mm Blade | 11 Nos. |
| 7. | Pliers combination 20cm. | 11 Nos. |
| 8. | Pliers side cutting 15cm | 11 Nos. |
| 9. | Pliers round nose 15 cm | 11 Nos. |
| 10. | Pliers round nose Circlip 15 cm & 20 cm (Internal & External) | 11Nos each |
| 11. | Pliers flat nose 15 cm | 11 Nos. |
| 12. | File flat Second cut 20cm | 5 Nos. |
| 13. | File flat Smooth 30cm | 5 Nos. |
| 14. | File half-round Second cut 20 cm. | 5 Nos. |
| 15. | File triangular Smooth 20 cm. | 5 Nos. |
| 16. | File flat Bastard 30 cm. | 5 Nos. |
| 17. | File Round bastard 30 cm. | 5 Nos. |
| 18. | Center punch 10 cm. | 11 Nos. |
| 19. | Hollow punch set of seven pieces 6mm to 15 mm | 2 Set |
| 20. | Drift punch copper 15 cm | 2 Nos. |

| | | |
|-----|---|-------------|
| 45. | Spanners socket complete set up to 32 mm | 4 Sets |
| 46. | Adjustable spanner (pipe wrench 350 mm) | 2 Nos. |
| 47. | Torque wrench 12-68 Nm. | 2 Nos. |
| 48. | Oil can 0.5/ 0.25 liter capacity | 5 Nos. |
| 49. | Pressure grease gun (Hand & bucket type) | 1 Nos. each |
| 50. | Cleaning Tray different size | 20 Nos. |
| 51. | Piston ring expander | 2 Nos. |
| 52. | Piston ring compressor | 2 Nos. |
| 53. | Piston Ring Groove cleaner | 2 Nos. |
| 54. | Feeler gauge 20 blades (metric) | 11 Nos. |
| 55. | Feeler gauge piston (metric) | 2 Nos. |
| 56. | Plastic Gauge | 4 Nos. |
| 57. | Piston ring compression gauge /tester | 1 Nos. |
| 58. | Toe-in, toe-out gauge | 1 Nos. |
| 59. | Wheel alignment gauge | 1 Nos. |
| 60. | Camber angle gauge | 1 Nos. |
| 61. | Tyre pressure gauge (wall type -1No & hand -4 Nos.) | 5 Nos. |
| 62. | Speed counter – pointed type to read up to 5000 RPM | 1 Nos. |
| 63. | Valve spring Lifter | 1 Nos. |
| 64. | Valve grinding tool-suction type | 5 Nos. |
| 65. | Valve key inserter | 5 Nos. |
| 66. | Cylinder bore gauge capacity 20 to 160 mm | 2 Nos. |
| 67. | Cylinder ridge remover/ cutter | 2 Nos. |
| 68. | Injector cleaning kit (in a wooden box complete) | 4 Nos. |

| | | |
|------|--|------------|
| 91. | Scriber wit scribing black universal | 4 Nos. |
| 92. | Hand vice 37 mm | 2 Nos. |
| 93. | Surface plate 60x60 cm | 1 No. |
| 94. | 'V' block different size clamps | 4 Nos. |
| 95. | Vice grip pliers | 6 Nos. |
| 96. | Steering gear box with drop arm and push rod Mechanical diff. make | 2 Nos. |
| 97. | Power steering (hydraulic type) | 1 No. |
| 98. | Front axle with hub diff. make | 2 Nos. |
| 99. | Disk break with caliper assembly | 2 Nos. |
| 100. | Tractor transmission assy. with wheels diff. HP Tractor | 2 Nos. |
| 101. | Spare parts of tractor | As desired |
| 102. | Air Compressor double stage with pressure gauge | 1 No. |
| 103. | Car washer | 1 No. |
| 104. | Washing unit | 1 No. |
| 105. | TRACTOR 45 HP | 1 No. |
| 106. | Tractor 60 HP power steering | 1 No |
| 107. | Diesel GEN SET-25/50 KVA with AMF facility | 1 No. |
| 108. | Mould Board Plough-Augur type | 1No. |
| 109. | Disc Plough 3 Bottom | 1No. |
| 110. | Cultivator 9/ 11 time | 1 No. |
| 111. | Disc Harrow 8x8 trailed type | 1 No. |
| 112. | Disc Harrow (14 Mounted type) off set | 1 No. |
| 113. | Paddy harrow (14 Disc mounted type) | 1 No. |
| 114. | Spike tooth harrow | 1.No. |

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|------|---|--------|
| 139. | Hay-bailer & fodder | 1 each |
| 140. | Chaff cutter and silage cutter | 1 each |
| 141. | Tractor operated ground nut digger | 1No. |
| 142. | Tractor operated potato digger & spreader | 1 each |
| 143. | Power operated potato Grader | 1No. |
| 144. | Power Operated Cleaner | 1No. |
| 145. | Power operated Grader (wheat, maize & potato) | 1No. |
| 146. | Winnower | 1No. |
| 147. | Dal Mill | 1No. |
| 148. | Rice Mill/Paddy dehauskar | 1each |
| 149. | Floor Mill | 1No. |
| 150. | Wind mill | 1No. |
| 151. | Drier (solar/heater) | 1No. |
| 152. | Moisture meter | 1 No. |
| 153. | Solar street light | 1No. |
| 154. | Weighing balance | 2Nos. |
| 155. | Measuring tape different size | 4Nos. |
| 156. | Electric motor 3 Phase 7.5 H.P. | 1No. |
| 157. | Electric motor 3 Phase 10 H.P. | 1No. |

SYLLABUS



ON

TRADE TECHNOLOGY -II 3-MONTHS MODULE

FOR

FARM MECHANIC.

FOR

CRAFT INSTRUCTOR TRAINING SCHEME.

List of members attended the workshop for designing the syllabus on
“ TRADE TECHNOLOGY (TT- II)” for **FARM MECHANIC** under
Craft Instructor Training Scheme on 29.05.2009 at ATI Gill Road
Ludhiana.

| Sl. No | Name of member & Designation S/Sri... | Representing Organization with address | |
|--------|--|---|----------|
| 1 | Dinesh Kumar Nijhawan, Director | ATI, Ludhiana | Chairman |
| 2 | C.P.Sharma, Jt. Director | ATI, Ludhiana | Member |
| 3 | Sukhdev Singh , DDT | ATI, Ludhiana | Member |
| 4 | Gurcharan Singh, ADT | ATI, Ludhiana | Member |
| 5 | P.S. Kharbanda,Ex.ADT | ATI, Ludhiana | Member |
| 6 | Jagdish Singh, ADT | ATI, Ludhiana | Member |
| 7 | Munish Rattan, Lecturer | GNE College ,Ludhiana. | Member |
| 8 | Hardev Singh Sodhi, Ex.C.I.(Tractor Mech) | ITI Ludhiana | Member |
| 9 | Jagdev Singh Grewal, Ex.C.I.(MMV) | ITI Ludhiana | Member |
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| 11 | Harbans Lal ,Trg. Officer | ATI, Ludhiana | Member |
| 12 | Balwinder Singh ,C.I.(Tractor Mech.) | ITI,Manuke, Ludhiana. | Member |
| 13 | V.K. Grover , AGM | HMT Ltd. Pinjore | Member |
| 14 | .Ankit, Research Associate | Dept. of Farm Power & Machinery PAU , Ludhiana. | Member |
| 15 | Parmod Kumar , C.I. | ITI Ludhiana | Member |
| 16 | Harbans Singh,Trg. Officer | ATI, Ludhiana | Member |
| 17 | M.R.Sharda, Trg. Officer | ATI, Ludhiana | Member |
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| 4. | Sessional | = 50 | 30 |
| | Total | = 400 | 240 |

SYLLABUS FOR THE INSTRUCTOR 'S COURSE IN FARM –MACHANIC

Trade Technology – II

| Sr. No. | Week No. | Theory | Practical |
|---------|----------|--|--|
| 1 | 1 | <ul style="list-style-type: none"> • Introduction to the trade curriculum. • Importance of the trade in the advancement of Agriculture technology in the country. • Use of computer. • Features & applications. • Data types. • Physical & logical concept of data. • Different systems of tractor. • Major dimension of tractor. • Types of engine, working & its components. • Types of systems used in engine. • Types of hydraulic system. • Principles of operation of hydraulic system. • Care and maintenance. | <ul style="list-style-type: none"> • Importance of safety precautions to observed in the section. • Familiarization with computer. • General purpose & special purpose computer. • Identify different systems of tractor. • Components of tractor systems. • Servicing & tuning of the engine. • Fault finding in hydraulic system. • Dismantling of hydraulic pump and distributor. • Assembling of hydraulic pump and distributor. • Set and adjust hydraulic pressure at ideal rpm of engine. • Drive mechanism of hydraulic system. • Hitching practice of implements with three point linkage system. |
| 2 | 2 | <ul style="list-style-type: none"> • Types of tillage & their uses. • Working principles of ploughs. • Constructional details. • Workshop adjustments. • Method of hitching. • Importance of weight transfer. • Considerations while using mounted and semi mounted implements. • Method of ploughing. • Methods of field operation. • Recommended speeds for operation. • Daily and periodical maintenance. | <ul style="list-style-type: none"> • Dismantling of MB plough. • Checking, repairing & replacing the Component. • Assembling of MB plough. • Measuring Horizontal & Vertical suction. • Dismantling of disc plough. • Checking, repairing & replacing the Component. • Assembling of disc plough. • Measuring disc & tilt angle of disc plough. • Workshop adjustments. • Hitching of ploughs. • Field operation & adjustments. • Faults and remedies. |
| 3 | 3 | <ul style="list-style-type: none"> • Function & working of sub soiler/ chisel plough. • Constructional details. • Function & working of Rotavator. • Workshop adjustments. • Method of hitching. • Importance of weight transfer. • Method of ploughing. • Method of Field operation. | <ul style="list-style-type: none"> • Servicing of sub soiler. • Dismantling of chisel plough. • Checking, repairing & replacing the Component. • Assembling of chisel plough. • Hitching of sub soiler/ chisel plough. • Dismantling of Rotavator. • Checking, repairing & replacing the Component. • Assembling of Rotavator. |

| | | | |
|---|---|---|---|
| | | <ul style="list-style-type: none"> • Types of channels. • Different types of irrigation pipes, valves and hydrants. • Use of drippers. • Use of sprinklers & Rain gun • Measuring devices for irrigation water. • Pump selection, common prime movers, and coupling devices. • Care & maintenance. | <ul style="list-style-type: none"> • systems and equipment used. • Installation of HDPE, QRC, PVC & dipper pipe line. • Installing sprinkler and drippers. • Installing high volume rain gun. • Field operation & adjustment. • Faults and remedies. • Troubles and remedies. • Precautions while handling insecticides and pesticides. |
| 7 | 7 | <ul style="list-style-type: none"> • Types of sprayers & dusters. • Working principles. • Calibrations. • Method of operation. • Methods of weeds control. • Pre-emergence and post emergence applications and equipment used for their applications. • Common prime movers. • Workshop adjustments. • Precautions in handling weedicide. • Care & maintenance. | <ul style="list-style-type: none"> • Servicing of high clearance sprayers. • Servicing of cotton sprayers. • Servicing of Aero blast sprayers. • Servicing dusters & fogging machine. • Repairs and adjustments. • Adjustments of a sweep type cultivator for weeding as per crop. • Servicing of weeder/ power tiller. • Repairing shovels and sweeps. • Operation & field adjustments. • Troubles and remedies. |
| 8 | 8 | <ul style="list-style-type: none"> • Types of reaper & straw-reaper. • Constructional details, functions. • Workshop and field adjustments. • Precautions in transporting. • Types of threshers, maize Sheller and ground nut decorticators. • Working principles constructional details, material used. • Prime movers and driving systems. • Adjustments and operations. • Measuring important speeds affecting the performance. • Precautions in transporting. | <ul style="list-style-type: none"> • Practice in dismantling and assembling reaper & straw-reapers. • Cutter bar adjustments. • Servicing and operation in the field. • Servicing of multi crop threshers. • Practice in replacement of thresher & cylinder. • Servicing of veg. thresher. • Servicing of maize Sheller. • Servicing of ground nut decorticator. • Adjusting and operating in field. • Hitching and fitting with prime mover. • Measuring different speeds. • Faults finding. |
| 9 | 9 | <ul style="list-style-type: none"> • Purpose of combine. • Advantages and limitations. • Types of combines. • Types of threshers used in combine • Power transmission and drives. • Flow path material. • Function of header assembly for maize crop. | <ul style="list-style-type: none"> • Dismantling different systems of combine harvester. • Checking and repairing the cutter bar assembly. • Replacement thresher cylinder & concave. • Checking and repairing the feeding assembly. • Assembling of different systems of combine harvester. |

| | | | |
|----|----|---|--|
| | | <ul style="list-style-type: none"> • Adjustments of combines for different crops. • Adjustments of combines for different crops. • Method of transportation. • Method of field operation • Precautions while operating in the field. • Trouble shooting and remedies. • Common accidents and their prevention. | <ul style="list-style-type: none"> • Adjusting the straw walker & sieves. • Adjusting the blower. • Fitting of cutter bar with feeder. • Field operation of wheat crop. • Field operation of paddy crop. • Adjustment of Harvester acc. to crop. • Method of transportation. |
| 10 | 10 | <ul style="list-style-type: none"> • Need of green harvesting equipment. • Types of movers. • Function and working of movers, rotary harvester, hay-bailer & fodder. • Function and working of chaff-cutter. • Method of field operation. • Method of transportation. • Common accidents and their prevention. | <ul style="list-style-type: none"> • Servicing of rotary harvester. • Servicing of & haybailer. • Servicing of mover. • Servicing of fodder. • Servicing of chaff-cutter. • Attachment with prime mover. • Workshop adjustment. • Field operation & adjustment. • Common troubles and its causes. |
| 11 | 11 | <ul style="list-style-type: none"> • Need & importance of root harvesting machine. • Types & working of diggers. • Components of diggers. • Transporting the root harvesting machinery. • Importance of winnowing. • Types of winnower and its parts. • Importance of cleaning & grading. • Types of cleaner/grader. • Methods of cleaning/grading. • Prime mover and driving system • Troubles and maintenance. • Safety precautions | <ul style="list-style-type: none"> • Repair and maintenance adj of diggers.. • Workshop adjustment of diggers. • Attachment of diggers with prime movers. • Field operations. • Servicing and adjust of winnower. • Servicing and adjust of cleaner. • Servicing and adjust of graders. • Fitting with prime mover. • Operation of winnower, cleaner and grader. • Common troubles and its causes. |
| 12 | 12 | <ul style="list-style-type: none"> • Need & importance of mills. • Construction detail. • Prime mover and driving system. • Electrical connection. • Recommended temperature for different crops. • Importance of drier. • Common accidents and their prevention. • Care and maintenance. | <ul style="list-style-type: none"> • Dismantling & assembling dehauskar. • Dismantling & assembling dal mill. • Dismantling & assembling flour mill. • Adjustments of mills. • Power transmission system • Operation of mills. • Servicing /setting of drier. • Operation of drier. • Adjust drier at recommended temp. & time for different crops. |
| 13 | 13 | REVISION & FINAL TEST | |

LIST OF TOOLS & EQUIPMENTS
Trade Technology – II

| Sl. No. | Item/ Specification | Quantity |
|---------|--|---------------|
| 1 | Tractor 60 HP power steering | 1No. |
| 2 | Tractor 75 HP 4WD | 1No. |
| 3 | Mould Board Plough-Augur type | 1No. |
| 4 | Disc Plough 3 Bottom | 1No. |
| 5 | Disc Plough 2 Bottom reversible | 1No. |
| 6 | Chisel Plough- 5/7 tine | 1No. |
| 7 | Rotavator – 5.5' cutting Width | 1No. |
| 8 | Sub solier 24 -30" | 1No. |
| 9 | Disc Harrow 8x8 trailed type | 1No. |
| 10 | Disc Harrow (14 Mounted type) off set | 1No. |
| 11 | Paddy harrow (14 Disc mounted type) | 1No. |
| 12 | Spike tooth harrow/ power harrow | 1No. |
| 13 | Blade harrow/ spring tyne | 1No. |
| 14 | Pulverizing Roller (Tractor Mounted) with spring loaded (11tyne) cultivator | 1No. |
| 15 | Tractor operator Angle blade Tracer | 1No. |
| 16 | Laser Leveler complete with transmitter, receiver, control box, survey equipment, 700 meter range | 1 set |
| 17 | Tractor operator Front mounted dozer with Hydraulic single cylinder | 1No. |
| 18 | Tractor operator scraper and bucket scraper | 1No. |
| 19 | Tractor Operator ditcher | 1No. |
| 20 | Tractor Operator trencher 10" to 16" Width & 4 ft depth | 1No. |
| 21 | Tractor Operator post hole digger | 1No. |
| 22 | Tractor Operator Zero/ strip till Seed cum fertilizer drill 9/11 rows | 1No. |
| 23 | Tractor PTO operated multi - crop direct sowing happy seeder | 1No. |
| 24 | Tractor Operator Seed cum fertilizer drill cum planter | 1No. |
| 25 | Tractor operated two rows Semi /automatic potato planter | 1No. |
| 26 | Tractor operated bed farmer cum three rows planter | 1No. |
| 27 | Tractor operated two rows vegetable trans planter (semi automatic) | 1No. |
| 28 | Paddy transplanter | 1No. |
| 29 | Sugar cane transplanter | 1No. |
| 30 | Fertilizer applicator | 1No. |
| 31 | Centrifugal Pump with electric motor | 1 Unit |
| 32 | Submersible Pump complete unit | 1No. |
| 33 | <p>Sprinkler type and drip irrigation systems complete sets/ Pipes(Different materiel & Sizes) Such as :- PVC, HDPE, QRC & Poly Tubing Dripper(Different materiel & Sizes) Jets, Foggers & Mister</p> <ul style="list-style-type: none"> • Sprinkler(Mini, Micro, angular and circular type) • Lawn sprinkler and garden pop-ups • Accessories and fitting for spray pop-ups • Low volume & High volume rain gun range 15 to 30 meter die • Accessories and fitting for rain gun • Compression Fittings (Elbow, Elbow Treaded, Joiner, Tee, End Cap, adopter Male.) • HDPE fittings (Elbow, Elbow Treaded, Joiner, Tee, End Cap, adopter Male.) • PVC Fittings (Elbow, Elbow Treaded, Joiner, Tee, End Cap, | As per desire |

| | | |
|----|--|-------------|
| | adopter Male.) <ul style="list-style-type: none"> • PVC Control valve different sizes • Air Release Valve different sizes • Butterfly / G.M. Gate Valves different sizes • Fertigation Tank 30 to 160 Litres • Fertigation Equipment Pump 30 to 160 Litres • Filters (Primary filter) Sand, Hydro cyclone, Screen, Plastic/metal & Disc and Drip line • Poly joiner , reducer, Tee, Elbow ,End stop different sizes • Grommet hole plug different sizes • Pressure gauge • Three way cock for gauge • PVC valve box different sizes • Water meter, Brase pressure regulator and irrigation drum • Jain spanner repair tool kit & Drip line binder • Single phase electric motor 3 HP high speed (Booster) | |
| 34 | Tractor PTO operated sprayer for cotton | 1No. |
| 35 | Self propelled high clearance sprayer with 20 hp diesel engine | 1No. |
| 36 | Tractor PTO operated aero blast spray | 1No. |
| 37 | Power operated fogging machine | 1No. |
| 38 | Power operated manure spreader | 1No. |
| 39 | Power Tiller | 1No. |
| 40 | Mechanical Power Weeder | 1 each |
| 41 | Self propelled riding type Reaper/Reaper winder | 1No. |
| 42 | Fodder kit for self Propelled reaper | 1No. |
| 43 | Power operated soybean reaper | 1No. |
| 44 | Straw reaper | 1No. |
| 45 | Thresher rasp bar type | 1No. |
| 46 | Maize crop thresher | 1No. |
| 47 | Multi crop thresher | 1No. |
| 48 | Semi-axial flow multi crop thresher | 1No. |
| 49 | High capacity multi crop thresher | 1No. |
| 50 | Axle flow vegetable thresher | 1No. |
| 51 | Groundnut decorticator | 1No. |
| 52 | Winnower | 1No. |
| 53 | Prime movers (Engine Stationery type) | 1No. |
| 54 | Engine - for walking and riding type reapers | 1No. |
| 55 | Engine Spare Parts | As per req. |
| 56 | Self propelled Combine Harvester axial flow/Track type combine Harvester | 1No. |
| 57 | Header Assembly for maize and sun-flower | 1No. |
| 58 | Tractor Operated Combine Harvester multi- crops | 1No. |
| 59 | Mower/Grass Cutter | 2No. |
| 60 | Tractor operated hay bailer | 1No. |
| 61 | Rotary Harvester | 1No. |
| 62 | Chaff cutter and silage cutter | 1each |
| 63 | Field crops like wheat, Soya bean, paddy etc.(As per practice) | |
| 64 | Fodder Harvester/ Chopper Flale type | 1No. |
| 65 | Tractor trailer with hydraulic system | |
| 66 | Tractor operated implement loading beam | |
| 67 | Tractor operated potato digger | 1No. |

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| 68 | Tractor operated ground nut digger | 1no. |
| 69 | Tractor operated onion digger | 1No. |
| 70 | Power operated Grader (wheat, maize) | 1No. |
| 71 | Power operated potato Grader | 1No. |
| 72 | Picking platform | 1No. |
| 73 | Power Operated Cleaner | 1No. |
| 74 | Drier (Solar/Heater) | 1No. |
| 75 | Dal Mill | 1No. |
| 76 | Rice Mill/Paddy dehauskar | 1No. |
| 77 | Rice Polisher | 1no. |
| 78 | Floor Mill | 1No. |
| 79 | Wind mill | 1No. |
| 80 | Solar street light | 1No. |
| 81 | Weighing balance | 2No. |
| 82 | Measuring tape | 4No. |
| 83 | Power Operator potato grader | 1No. |
| 84 | Kino/ Orange grader | 1 each |
| 85 | Vaccine Machine | 1No. |
| 86 | Sewing Machine/Bag stitcher | 1no. |
| 87 | Electric motor 3 Phase 7.5 H.P. | 1No. |
| 88 | Electric motor 3 Phase 10 H.P. | 1No. |
| 89 | Laptop Computers with Trade Related Software | 2 Nos. |
| 90 | Note book Computers with Trade Related Software | 11 Nos. |
| 91 | Air conditioner 1.5 ton & 2 ton | 1 each |