

Agriculture Engineering Sample Notes for IBPS AFO Mains & Interview Course By agriguru.in



**This Is Sample Notes Of Agriculture
Engineering This Contain Only Some
Important Points.**

**A dream does not become reality through
magic; it takes sweat, determination, and hard
work.**

**With this, Start your preparation from today
onwards with our quality study material with
whom you can trust.**

**Let's work together for your success by your
Hard work And Our Quality Study Material**

**If You Have Any Query Related To IBPS – AFO Mains
& Interview Preparation Course You Can Whatsapp Us
On 6201733962**

CLICK HERE TO ENROLL

Agriculture Engineering Sample Notes for IBPS AFO Mains & Interview Course By agriguru.in

FARM POWER IN INDIA **HUMAN, ANIMAL, MECHANICAL AND ELECTRICAL** **ENERGY SOURCES AND THEIR USE IN** **AGRICULTURE**



- Farm Power is an essential input in agriculture for timely field operations for increasing production and productivity of land.
- Farm power is used for operating different types of machinery like tillage, planting, plant protection, harvesting and threshing machinery and other stationary jobs like operating irrigation equipment, threshers/ shellers / cleaners/ graders, etc.



Agriculture Engineering Sample Notes for IBPS AFO Mains & Interview Course By agriguru.in

SOURCES OF FARM POWER

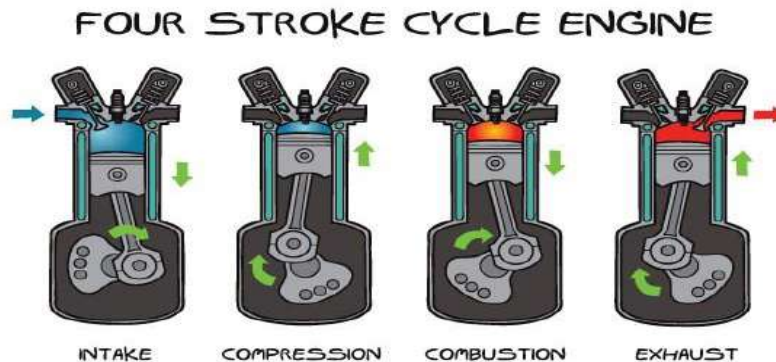


There are different sources of farm power available in India which are classified as-

1. Human power
2. Animal power
3. Mechanical power (**Tractors + Power tillers + Oil engines**)
4. Electrical power
5. Renewable energy (**Biogas + Solar energy + Wind energy**)

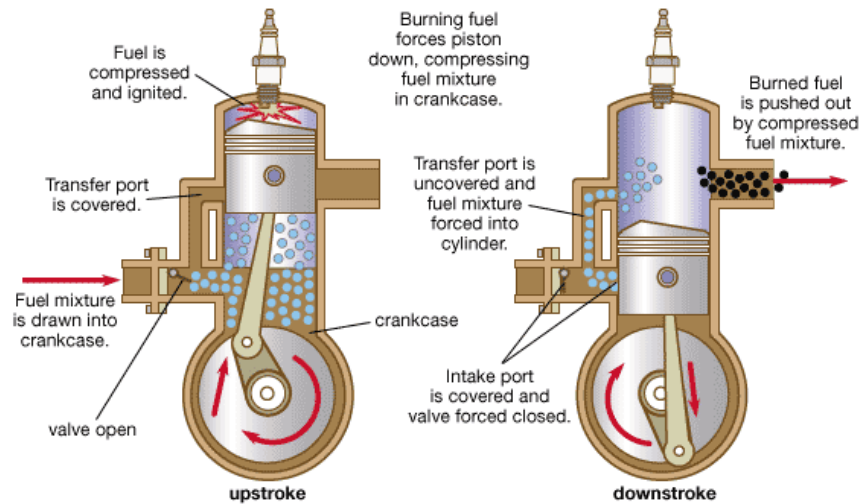
Agriculture Engineering Sample Notes for IBPS AFO Mains & Interview Course By agriguru.in

COMPARISON BETWEEN TWO STROKE AND FOUR STROKE ENGINES



<u>Four stroke engine</u>	<u>Two stroke engine</u>
One power stroke for every two revolutions of the crankshaft.	One power stroke for each revolution of the crankshaft.
There are inlet and exhaust valves in the engine.	There are inlet and exhaust ports instead of valves.
Crankcase is not fully closed and air tight.	Crankcase is fully closed and air tight.
Top of the piston compresses the charge.	Both sides of the piston compress the charge.
Size of the flywheel is comparatively larger.	Size of the flywheel is comparatively smaller.
Fuel is fully consumed.	Fuel is not fully consumed.
Weight of engine per hp is high.	Weight of engine per hp is comparatively low.

Agriculture Engineering Sample Notes for IBPS AFO Mains & Interview Course By agriguru.in



COMPARISON OF DIESEL ENGINE WITH PETROL ENGINE

<u>Diesel engine</u>	<u>Petrol engine</u>
It has got no carburetor, ignition coil and spark plug.	It has got carburetor, ignition coil & sparkplug.
Its compression ratio varies from 14:1 to 22:1.	Its compression ratio varies from 5:1 to 8:1.
Thermal efficiency varies from 32 to 38%	Thermal efficiency varies from 25 to 32%
It uses diesel oil as fuel.	It uses petrol (gasoline) or power kerosene as fuel.
Specific fuel consumption is about 0.2 kg per BHP per hour.	Specific fuel consumption is about 0.29 kg per BHP per hour.

Agriculture Engineering Sample Notes for IBPS AFO Mains & Interview Course By agriguru.in

Some Important Terminologies used in Agricultural Engineering

Power: It is the rate of doing work.

- Unit of power in SI units - **Watt (Joule/sec).**

Horse power (HP):

- It is the **rate of doing work**. It is usually expressed in horse power.
- **One HP is equivalent to 75 kg-m / sec.**

Conversion factors from work to power

- 4500 kg m of work /minute = **1.0 hp** (kg-force meter/minute)
- 75 kg m of work /second = 1.0 hp.
- Roughly, **1.0 hp = 746 watts (W) or 0.746 kilowatts (kW)**

***1 kW= 1000 W**

- **Bore:** Bore is the diameter of the engine cylinder.

Agriculture Engineering Sample Notes for IBPS AFO Mains & Interview Course By agriguru.in

FARM TRACTOR



History of Tractor Development

1890	The word tractor appeared first on record in a patent issued on a tractor or traction engine invented by George H. Harris of Chicago.
1906	First Gasoline tractor was developed by Charles Hart
1908	First Winnipeg tractor trails were held.
1911	First tractor demonstration was held at Omaha (Nebraska).
1915-19	PTO - Power take off was introduced in Tractor
1920-24	All-purpose Tractor was developed.

Agriculture Engineering Sample Notes for IBPS AFO Mains & Interview Course By agriguru.in

WHEEL TRACTOR Components



- I.C Engine
- Clutch
- Transmission gears
- Differential unit
- Final drive
- Real wheel
- Front wheels
- Steering mechanism
- Hydraulic control and hitch system
- Brakes
- Power-take-off unit

Agriculture Engineering Sample Notes for IBPS AFO Mains & Interview Course By agriguru.in

- Tractor pulley
- Draw bar
- Control panel

Clutch



- Clutch is a device, used to **connect and disconnect the tractor engine** from the transmission gears and drive wheels.
- Clutch transmits power by means of friction between driving members and driven members.