

**MAHARASHTRA STATE BOARD OF VOCATIONAL EDUCATION EXAMINATION,  
MUMBAI -51**

1	Name of Syllabus	<b>C.C.IN CONCRETE MIXER / VIBRATOR OPERATER- CUM- MECHANIC (304106)</b>																																								
2	Max.Nos of Student	25 students.																																								
3	Duration	6 Months																																								
4	Type	Part Time																																								
5	Nos Of Days / Week	6 Days																																								
6	Nos Of Hours /Days	4 Hrs																																								
7	Space Required	Workshop = 1300 Sq feet Class Room = 200 Sq feet TOTAL = 1500 Sq feet																																								
8	Entry Qualification	VII std passed																																								
9	Objective Of Syllabus/ introduction	INTRODUCTION :- A) Few lines about trisem scheme. B) The syllabus is prepared to fulfil the skilled manpower. The objection of the course are also given in short with the job potential and employment profiles.  OBJECTIVES :- To knew the constructional features and functions of Mixer and vibrator Applications of various types of mixture on RCC Structure pridge etc. to know about servicing and minor engine repairs and uses of various hand tools and mechanic should be able to assemble the engine component. To know the working / function of basic component of engine.																																								
10	Employment Opportunity	Self employment :- Mixer/Vibrator Operator. Wage employment :- Mixer/Vibrator service technician Fitter in Manufacturing concern spare parts sales assistant.																																								
11	Teacher's Qualification	Diploma / Certificate course in concern field.																																								
12	Training System	<table><tr><th colspan="3">Training System Per Week</th></tr><tr><td>Theory</td><td>Practical</td><td>Total</td></tr><tr><td>6 Hours</td><td>18 Hours</td><td>24 Hours</td></tr></table>						Training System Per Week			Theory	Practical	Total	6 Hours	18 Hours	24 Hours																										
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## **THEORY-I - Mixer/Vibrator Operating Techniques**

1. Types of concrete mixture used in various, structural construction . Details of raw material required (with std. proportion) for concrete mixture.
2. Basic study of Drives :- pulley Drive (V-belt, flat-belt) chain driver, gear driver, specific application and maintenance.  
Detail study of chain and gear drives and its specifications.
3. Types of Mixer function with detail specifications and applications.
4. Study of vertical Diesel engines – Single cylinder, Multi cylinder. Different parts its application servicing and Maintenance (Tank, Filters, Fuel pump Injector, valves and its operating mechanism, etc.)
5. Types of fuels and lubricative required for mixer.
6. Safety precaution in workshop practice, Hand tools. Advance hand tools pressure gauge, oil can, gas gun, compression tester, Ring expander etc. Various gauges.
7. Types of keys, cotter and coupling.  
Types Nut, Bolts, Locking arrangement for nuts, threads.
8. Vibrators – Importance and Application.  
Types of vibrator. Study of single vibrator (Function and working ) servicing and maintenance.  
Simple study of petrol engine.
9. Simple study of Induction motor, D.C. starter.  
Safety precautions, importance of earthing.

## **PRACTICAL – I - Preparation and Testing of Mixer**

1. Practical regarding the preparation of various mixtures Exercises involving the testing.
2. Detail study of each gradation used in mixture preparation
  1. Availability
  2. Types of manufacturing.
3. Durability and strength of R. C. C. mixture.
4. Good coarse Aggregate and its size. (Slump test) .
5. Testing of sand and cement in the field. .

## **Practical – II - Study of Diesel Engine and Concrete Materials**

1. Study of bearings and on Diesel engines mixture.
2. Fault finding, Preventive and repairs of Diesel engine.
3. Preventive maintenance of the machines, Lubricants, oils, Greases etc. with their specifications.
4. Visit to construction site .
5. Water cement ratio of mixing the concrete material's.
6. General description of mixture / vibrators.
7. Types Diesel engine various model available in market and its specification.
8. study of various parts, function of engine parts.
9. Parts cleaning valve, tappet setting etc.

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