

SYLLABUS OF WRITTEN EXAMINATION FOR SI (MASTER/ENGINE DRIVER/WORKSHOP)**(Objective type question with multiple choice answers to be answered on OMR Answer Sheet)****Time:-02 Hours**

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|----------------------------------|---|------------------------|
| a) General knowledge & awareness | - | 25 Marks (25 Question) |
| b) Reasoning Ability | - | 25 Marks (25 Question) |
| c) Numerical Ability | - | 25 Marks (25 Question) |
| d) Trade Awareness | - | 25 Marks (25 Question) |

Total - 100 Marks**STANDARD & SYLLABI OF WRITTEN EXAMINATION FOR SI (MASTER/ENGINE DRIVER/WORKSHOP) IS AS UNDER:-**

General knowledge & awareness	<ul style="list-style-type: none"> i) Current Affairs (Events related to India and its neighbouring countries) ii) General Science & Technology iii) Indian constitution iv) Indian History v) Indian Culture vi) Indian Geography vii) General Polity viii) Sports:-Championships/winners/number of players ix) Other Misc issues related to General Knowledge.
Reasoning Ability	<ul style="list-style-type: none"> i) Coding & Decoding. ii) Series (number & alphabet) iii) Figure classification iv) Relationship concepts. v) Distance & directions vi) Visual memory. vii) Spiral orientation. viii) Other basic concepts of reasoning.
Numerical Ability	<ul style="list-style-type: none"> i) Basics (2X2) (3X3) multiplications) squares. ii) Mixed fractions. iii) Averages. iv) Percentages. v) Profit & loss, Discount, Ratio vi) Time & Work vii) Simple interest, compound interest. viii) Simple mensuration.

<p>Trade Awareness [2nd Class Master Level for SI (Master) only]</p>	<p>i) Management of inland vessels under all conditions. ii) Knowledge of storm and distress signals. iii) Knowledge of the compass. iv) The rules of road as regards to both, sailing vessels & mechanically propelled vessels, their regulation, lights, fog and sound signals. v) The marking and use of the lead line. vi) Steps to be taken in the event of vessel grounding. vii) Management of inland vessels under tow or when towed or pushing. viii) Questions on carriage of iron ore, coal, Petroleum Products, cement fly ash & containers. ix) The provisions of the rules made by IWAI in respect of Life Saving and Fire Appliances and Conduct of vessels. x) Provisions of the rules with regards to carriage of passengers. xi) Knowledge of Loading Marks and Stability of Inland vessels. xii) Knowledge of Inland Vessels act xiii) Knowledge of GPS, DGPS, VHF, Radar and Echo sounder for safe navigation.</p>
<p>Trade Awareness [1st Class Engine Driver Level for SI (Engine Driver) only]</p>	<p>i) Principles and working of Internal Combustion Engines. ii) Fuel system, lubrication system and cooling system of engines. iii) Valve setting and injector setting of marine engine. iv) Trouble shooting of engines. v) Replacement of various lines and cylinder head of engines with appropriate knowledge of Torque. vi) Overhauling of engine. vii) Adjustment of working path of engine to get optimum efficiency of engine. viii) The provisions of the Inland vessel rules for Life Saving, Fire Appliances and general discipline.</p>
<p>Trade Awareness [SI (Workshop) only]</p>	<p>i) Units of measurement. ii) Internal combustion engines. iii) Cycles of 2 stroke and 4 stroke engines. iv) Components of diesel and petrol engines. v) Fuel system, lubrication system & cooling system of engine. vi) Voltage, current, resistance, Miniature circuit breakers. vii) Electronics, diode, transistor and printed circuit board. viii) Pumps, gears and clutches.</p>

SYLLABUS OF WRITTEN EXAMINATION FOR HC (MASTER/ENGINE DRIVER/WORKSHOP) & CONSTABLE (CREW)

(Objective type question with multiple choice answers to be answered on OMR Answer Sheet)

Time:-02 Hours

a) General knowledge & awareness	-	35 Marks (35 Question)
b) Reasoning Ability	-	35 Marks (35 Question)
c) Numerical Ability	-	30 Marks (30 Question)
Total	-	<u>100 Marks</u>

STANDARD & SYLLABI OF WRITTEN EXAMINATION FOR HC (MASTER/ENGINE DRIVER/WORKSHOP) & CONSTABLE (CREW) IS AS UNDER:-

General Knowledge & Awareness	<ul style="list-style-type: none"> i) Current Affairs (Events related to India) ii) Indian Constitution. iii) Indian History and Geography. iv) General Polity. v) Sports: Championships/Winners/Number of Players. vi) Other misc. issues related to General Knowledge.
Reasoning Ability	<ul style="list-style-type: none"> i) Coding & Decoding. ii) Series (number) iii) Alphabet (position based) iv) Relationship concepts. v) Distance & directions. vi) Arithmetic No. series. vii) Other basic concepts of reasoning.
Numerical Ability	<ul style="list-style-type: none"> i) Basics ((2X2) multiplications). ii) Mixed fractions. iii) Averages. iv) Percentages. v) Profit & loss. vi) Time & distance. vii) Simple interest, compound interest. viii) Simple mensuration

SYLLABUS OF TRADE TEST FOR SI (MASTER)**Identification of Parts**

a)	Life raft	j)	Magnetic compass
b)	GPS	k)	Cradles
c)	Radar	l)	Anchor stockless
d)	Echo Sounder	j)	Pneumatic finder
e)	Life Saving Equipments	k)	Anchor chain
f)	Fire fighting Equipments	l)	D- Shackle
g)	Davit	m)	Winch
h)	Inter National Signal Flag O,H, Z, B	n)	Mast
i)	Identification of all navigational lights	o)	Hydrographic Map

Practical

a)	Placing of speed boat / Mechanized / Medium vessel at Jetty.
b)	Removing of Speed Boat / Mechanized / Medium vessel from Jetty.
c)	Placing of Speed Boat /Mechanized / Medium vessel alongside of other boats.
d)	Anchoring of Speed Boat / Mechanized / Medium Vessel in shallow water
e)	Type of steering i.e. Mechanical and Hydraulic

SYLLABUS OF TRADE TEST FOR SI (ENGINE DRIVER)**Identification of Parts**

a)	Gear Box	m)	Life Saving Equipment's
b)	Heat Exchanger	n)	Oil Seal
c)	Fresh Water Pump	o)	Armature
d)	Pressure timing Pump	p)	Carbon Bush
e)	Exhaust Manifold	q)	Inlet Value
f)	Alternator	r)	Outlet value
g)	Overflow line	s)	Piston
h)	Primary Filter	t)	Crank shaft
i)	Secondary Filter	u)	Connection Rod
j)	Hydraulic Tank	v)	Oil Pressure ring
k)	Turbo Charger	w)	Fire fighting Equipment's
l)	Needle Value		

Practical

a)	Starting engine
b)	Emergency Shutdown
c)	Identification of two stroke and four stroke engine
d)	Routine check of engine
e)	Fault finding in Engine
f)	Starting of Diesel Generator Set
g)	Routing check before starting Diesel Generator set.

SYLLABUS OF TRADE TEST FOR SI (WORKSHOP)

Identification of Parts

a)	Gear Box	l)	Outlet valve
b)	Fresh Water Pump	m)	Cam Shaft
c)	Feeler Gauge	n)	Crank Shaft
d)	Alternator	o)	Connection Rod
e)	Diesel Filter	p)	Oil Pressure ring
f)	Lob-oil filter	q)	Adjustable wrench
g)	Push Rod	r)	Ball bearing
h)	Oil Seal	s)	Needle wrench
i)	Armature	t)	Various type of piston
j)	Carbon Brush	u)	Fire Extinguisher
k)	Inlet valve	v)	Compression gauge

Practical

a)	Starting the engine
b)	Identification of two stroke and four stroke engine.
c)	Routine check of engine
d)	Piston, Gudgeon pin connecting rod assembling
e)	Fault finding in Engine

SYLLABUS OF TRADE TEST FOR HC (MASTER)**Identification of Parts**

a)	Anchor:-Graphical, Den fort & CQR	j)	Compass
b)	Navigation Lights:-Red (Port) & Green (STBD)	k)	Fire Fighting Equipments (Foam type and Dry Chemical powder)
c)	Keel	l)	Lifesaving equipments
d)	Hull	j)	Gauges
e)	Propeller	k)	Pneumatic Finder
f)	Propeller shaft	l)	Railings
g)	Hand Held GPS	m)	Anchor Chain
h)	D-Shackle	n)	Mast
i)	Hydrographic Map	o)	Monkey Deck

Practical

a)	Placing of speed boat at Jetty.
b)	Removing of Speed Boat from Jetty.
c)	Placing of Speed Boat alongside of other boats.
d)	Anchoring of Speed Boat in shallow water
e)	Type knots in ropes:- Figure 8 & Clove Hitch

SYLLABUS OF TRADE TEST FOR HC (ENGINE DRIVER)**Identification of Parts**

a)	Crank Shaft	k)	Needle bearing
b)	Connection rod	l)	Carburetor flout
c)	Gudgeon pin	m)	U J Cross joint
d)	Piston	n)	Self-Starter
e)	Piston ring	o)	Gauges-Temp/Pressure/AMP/ Tachometer
f)	Liner	p)	Sump
g)	Injector	q)	Quick Pinion
h)	Cam Shaft	r)	Fire Fighting Equipments
i)	Push rod	s)	Fuel Injection Pump
j)	Rocket Arm	t)	Roller bearing

Practical

a)	Petrol	Smelling & touch be allowed for candidates
b)	Diesel	-do-
c)	Grease	-do-
d)	M-Oil	-do-
e)	Castrol 2T (Green)	-do-
f)	Starting Engine	
g)	Identification of two stroke and four stroke engine.	
h)	Checking the charge / gravity of Battery	
i)	Routine check of Engine	
j)	Fault finding in Engine.	

SYLLABUS OF TRADE TEST FOR HC (WORKSHOP) MECHANIC (DIESEL & PETROL)/MOTOR MECHANIC

Identification of Parts

a)	Crank Shaft	k)	Fuel injection pump
b)	Connecting rod	l)	Roller bearing
c)	Gudgeon pin	m)	Needle bearing
d)	Piston	n)	Carburetor flout
e)	Piston ring	o)	U J Cross Joint
f)	Liner	p)	Self-starter
g)	Injector	q)	Gauges-Temp/Pressure/AMP/ Tachometer
h)	Cam shaft	r)	Sump
i)	Push rod	s)	Quick Pinion
j)	Rocker Arm	t)	Fire Fighting Equipment

Practical

i)	Piston , Gudgeon pin connecting rod assembling
ii)	Fitting of Carburetor
iii)	Idle RPM setting
iv)	Fitting of Spark plug
v)	Fitting of Self starter

SYLLABUS OF TRADE TEST FOR HC (WORKSHOP) MACHINIST

Identification of Parts

a)	Round file	j)	Dye
b)	Triangular file	l)	Cutting tool
c)	Half Round File	m)	Boring tool
d)	Cutter	n)	Outer caliper
e)	Grinder	o)	Inner caliper
f)	Drill Machine	p)	Vernier caliper
g)	Hand drill machine	q)	Micro meter
h)	Drill bits	r)	Thread guage
i)	Tape	s)	Drill Bits

Practical

i)	Straight cutting of rod by using hacksaw.
ii)	Block surface thickness down in a given dimension by using file or machine.
iii)	Straight cutting of pipe by using hacksaw.
iv)	Straight cutting of angle iron by hacksaw.
v)	Straight cutting of metal sheet at least 5 cm by hacksaw.
vi)	Least count of micrometer / vernier caliper.

SYLLABUS OF TRADE TEST FOR CONSTABLE (CREW) ENGINE DRIVER SIDE (GREASER)

i)	To qualify 50 Mtrs swimming test without any assistance
ii)	Identification of parts of Engine (on board)
iii)	Recognition of life saving and firefighting equipment
iv)	Checking of engine oil level
v)	Things to be checked before starting of engine
vi)	Type of knots
vii)	Rowing with Oars/bamboo

SYLLABUS OF TRADE TEST FOR CONSTABLE (CREW) MASTER SIDE (SUKHANI)

i)	To qualify 50 Mtrs swimming test without any assistance.
ii)	Identification of parts of boats (on board)
iii)	Recognition of life saving and firefighting equipments
iv)	Mooring of boat
v)	Anchoring of boat
vi)	Making different types of knots
vii)	Rowing with Oars/Bamboo
viii)	Things to be checked before sailing
ix)	Maintenance of boat