Eligibility criteria required for appearing examination under Kochi Port, Harbour Craft Rules For Engine Side Candidates

Deck Side	2 nd Class Engine Driver	1 st Class Engine Driver	Motor Engineer's Certificate
Age	Not less than 21 years	Not less than 22 years	Not less than 22 years as on
	as on 15-09-2018	as on 15-09-2018	15-09-2018
Nationality		INDIAN	
Sea service	At least 3 (three) years of	At least 1 (one) year of	At least 4 Yrs, apprentice engineer or
	service as an apprentice or	service as engine driver	motor engines
	repairing of internal	on regular watch on the	motor engines.
	combustion engine and in	main engines of a motor	Note:- Any deficiency in the
	addition must have served	vessel of not less than	requisite 4 yrs, workshop service
	for 6 (six) months in the	565 BHP whilst holding a	may be made up by service afloat on
	engine room having	2 nd class engine driver	regular watch in the main engine
	engines of not less than 85	COC under IV Act 1917 or	regular watch in the main engine
	BHP or 9 (nine) months on	CPT (Harbour Craft) Rules	
	not less than 40 BHP	OR	внр.
	OR		a) If the vessel is sea going than
		At least 1.5 (18 months)	and and half times the period
	At least 4 (four) years of	years of service as 2 nd	of deficiency must be carved
	service in engine room of	driver with a COC of 2 nd	b) If an inlend wassel then two
	motor vessel not less than	class engine driver COC	b) If an inland vessel than two
	226 BHP, of which at least	under IV Act 1917 or CPT	and a quarter times the
	1 (one) year as an oilman	(Harbour Craft) Rules in	period of deficiency shall be
	OR	charge of a watch of not	required.
		less than 226 BHP	OR
	At least 5 (five) years of	OR	Candidates not having workshop
	service in engine room of		service must serve at least 6 yrs. on
	vessel not less than 85 BHP	At least 4 (four) years of	Sea Going Vessel, <u>or</u> must serve at
	OR	service in engine room of	least 9 yrs. in Inland Vessel on not
		motor vessel of not less	less than 565 BHP.
	At least 2 (two) years of	than 226 BHP, of which at	
	service whilst in possession	least 1 (one) year as a	In addition to above service, all
	of a license as an Engine	Chief Greaser or Serang	candidates must have spent 18
	Driver granted under IV	or Principal Tindal whilst	months at sea as an engineer on
	act, 1917 or CPT (Harbour	holding a 2 th class engine	regular watch on the main engines
	Craft) Rules of a motor	driver COC under IV Act	of a sea-going ship not less than
	vessel having engines of 80	1917 or CPT (Harbour	565 BHP or 27 months in a similar
	ВНР	Craft) Rules	Inland Vessel.
		OP	
	At least 2 (three) years of		
	service in engine room of a	At least 5 (five) years of	
	motor vessel having	service in engine room of	
	engines of more than 80	motor vessel of not less	
	BHP as Serang. Tindal or	than 170 BHP of which at	
	Oil man.	least 2 (two) years must	
		have been served as	
		Serang or Principal	
		Oilman or Chief Greaser	
		whilst holding 2 nd class	
		engine driver COC under	
		IV Act 1917 or CPT	
		(Harbour Craft) Rules	
		OR	
		At least 1.5 (18 months)	

	1	r	
		years of service with 2 nd class engine driver COC under IV Act 1917 or CPT (Harbour Craft) Rules as driver-in-charge of the engines of motor vessel of not less than 113 BHP <u>OR</u> At least 4 (four) years of service as Engine Driver on regular watch on the main engines of a motor vessel of not less than 226 BHP whilst holding 2 nd class engine driver COC under IV Act 1917 or CPT (Harbour Craft) Rules	
Preferred			
Language of		English	
Exam			
Syllabus	1 The candidate	1 The candidate	1 Ho must write a losible band
	must know what	must know what	1. He must write a legible hand
	attention is	attention is	and have a good knowledge of
	required by the	required by the	arithmetic up to and including
	various parts of the	various parts of	vulgar and decimal fractions
		the machiner	and square root. He must also
	machinery,	me machinery,	be able to work out questions
	Understand the	Understand the	relating to spring or lever-
	Use and	use and	loaded safety and relief valves,
	management of	management of	consumption of oil and stores,
	the different	the different	capacities of tanks, bunkers,
	valves, cocks,	valves, cocks,	etc., speed of vessels, and
	pipes and	pipes and	other similar problems, and be
	connections; and	connections; and	able to calculate suitable
	be familiar with	be familiar with	working pressures for air
	the various	the various	receivers of given dimensions
	methods of	methods of	and the stress per square inch
	supplying air and	supplying air and	on crank tunnel shafts and
	fuel to the	fuel to the	other parts of the machinery
	cylinders.	cylinders.	when the necessary data are
			furnished.
	2 The candidate	2 The candidate	2 He must be able to give a
	must be able to	must be able to	clear explanation of the
	describe the chief	describe the chief	principles on which all are an
	causes which may	causes which	principles on which oil, gas of
	make the engine	may make the	orner internal compustion
	difficult to start and	engine difficult to	engines work, including the
	to evolain how he	engine unicul lu	methods of ignition, to point out
	would proceed to	explain how he	the differences between them,
	romody any		and to show by means of
	defects corrected		illustrative sketches and
	derects connected	remedy any	otherwise that he understands
	therewith; he must	detects	the details of the construction of

also be able to	connected	those in general use.
show that he	therewith; he	
understands the	must also be able	3. He must be familiar with the
mechanism of the	to show that he	various methods of supplying
starting and	understands the	air and fuel to the cylinders in
reversing	mechanism of the	the different types of engines,
arrangements and	starting and	the construction of the
that he is	reversing	apparatus for carburetting,
competent to deal	arrangements	atomising, or gasifying the fuel,
	and that he is	and the means for cooling the
with defects	ana mai ne is	cylinders, pistons, etc.
merein.	competent to	, , , ,
	deal with detects	4. He must have a satisfactory
3 The candidate must	therein.	knowledge of the process
be able to overhaul		employed in the construction of
the engine, to adjust	3 The candidate must	internal combustion engines in
the working parts	be able to overhaul	the workshop and of the . He
and to put the engine	the engine, to	must know what attention is
together again in	adjust the working	required by the various parts of
aood workina	parts and to put the	the machinery and understand
condition. He must	engine together	the use and management of
also understand how	again in good	the different valves cocks
to make good the	working condition	nine and connections
result of ordinary	He must also	pipes and connections.
wear and tear to the	understand how to	5. He must be able to state and
wear and rear to me		describe the chief causes which
machinery and now	make good the	may make the engines difficult
to correct detects	result of orainary	to start and to explain how he
from accidents.	wear and tear to	would proceed to remedy any
4 The candidate must	the machinery and	defects grising there from He
be familiar with the	how to correct	aelects along here itom. He
nature and	defects from	musi also be able to show that
properties of the	accidents.	ne understands the mechanism
properties of the	1 The candidate must	of the starting and reversing
in internal	4 me canalaale mosi	arrangements, and is
		competent to deal with defects
compussion engines.	nature ana	therein.
He must understand	properties of the	4 He must understand how to
what is meant by	various fuel oils	b. He must understand how to
flash-point"	used in infernal	ardings wear and togs to the
5 The candidate must	combustion	brainary wear and lear to the
know the danger	engines. He must	machinery, now to test the
resulting from	understand what is	fairness of snatting, etc., now to
leakage from the	meant by 'flash-	correct detects from accident,
fuel oil tanks and	point"	delay, etc. and how a
must understand the	5 The candidate	temporary or permanent repair
precautions to be	must know the	could be effected in case of
taken against	danger resulting	derangements or total
avalasion la must	from loakago from	breakdown.
	the fuel oil tanks	
		. ne musi understand me
		construction of the pressure
precautions to		gauge, parometer,
guara against the	precautions to be	i inermometer, and other

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es	cape of	taken against	instruments used in the engine-
inf	lammable vapour	explosion. He must	room and the principles on
fro	m the vaporiser	also be able to	which they work.
wr	ien the engines	take the necessary	8 He must understand the
are	e stopped. He	precautions to	construction and working of
mu	ust also know how	guard against the	centrifugal bucket and
to	deal with fire	escape of	plunger pumps and the
sh	ould it break out.	inflammable	principles on which they act
		vapour from the	principles on which mey der.
		vaporiser when the	9. He must understand the
The	candidate must	engines are	construction and working of air
also	be able, if	stopped. He must	compressors, steering engines,
reau	vired, to know -his	also know how to	electric light engines and
prac	ctical knowledge	deal with fire	dynamos, electric motors,
bv	actually working	should it break out.	refrigerating, hydraulic and
the	engines of a	The candidate must	other auxiliary machinery
mot	or vessel in the		found on boardship
nres	ence of the	required to know	
Piez Piez	miner.	his product	10. He must be familiar with the
			nature and properties of the
		hy actually working	various oils, etc., generally used
		by actually working	in internal combustion engines,
		me engines of a	must understand what is meant
		motor vessel in the	by flash point; and have a
		presence of the	knowledge of the explosive
		examiner.	properties of gas on the vapour
			given off by those oils, etc.,
			when mixed with definite
			quantities of air, and be
			thoroughly conversant with the
			danger of exposing such gas or
			vapour to a naked light; or of
			allowing any leakage from the
			oil tanks particularly into the
			vessel's bilges and
			unventilated spaces or-from
			aas producers pipes
			vapourizers etc
			11. He must thoroughly
			understand the precautions to
			be taken against fire or
			explosion from oil or gas and
			know how to deal with fire
			should it break out. He should
			also be familiar with the action
			of wire gauge diaphragms
			when placed in pipes and
			connections to oil tanks, etc.,
			for the purpose of preventing
			the He must be able to explain
			the principal construction and

	arrangement of primary and secondary batteries and induction coils so far as is necessary for the efficient management of an oil engine.
	12. He must be able to take off and calculate indicator diagrams and understand the action of the gas in the cylinder as shown thereby.
	13. He must be able to make a dimensioned working sketch drawing of some simple part of the machinery.