

Detailed Syllabus for the post of FOREST BOAT DRIVER (FOREST) - Direct Recruitment

(Cat.Nos: 138/2021, 662/2021)

PART - I

MODULE I : INLAND VESSELS GENERAL KNOWLEDGE (5 Marks)

- a) IV act 2021 replaces IV act 1917
- b) Purpose of new act
- c) Explain national waterways and Zones
- d) Functions of IWAI
- e) Type of inland vessels
- f) Base line/Significant wave height etc

MODULE II : General and Marine Engineering (15 Marks)

- a) Types of Fasteners (eg.Bolts,screws,studs and their threads)
- b) Measuring instruments { Eg. Micrometers,Feeler guage,thermometer,calipers,presure guage etc)
- c) Types of Valves/cocks and its functions
- d) Quick closing valves
- e) Types and working principle of pumps (eg. Centrifugal pump,positive displacement pump, gear pump)
- f) Pipe fittings/Welding process
- g) Diesel engines – cycle of two and four stoke diesel engines
- h) Heat engines and petrol engines
- i) Parts of engines (eg. Engine block, cylinder head, connecting rod,crank shaft, cam shaft piston, piston rings ,main bearings, cylinder liners etc)
- j) Turbo charger/water cooled engines
- k) Bunkering
- l) Lubrication of engines
- m) Cranking
- n) Types of propellers and rudders
- o) Steering system

MODULE III: Electrical Engineering (15 Marks)

- a) Volt/Ampere/OHM/Frequency/Resistance
- b) Instrument measuring voltage and current /Meggar testing
- c) Lead acid batteries/Alkaline batteries/Battery maintenance
- d) Difference between AC and DC motors
- e) Circuit breakers
- f) Cables and Cable joints
- g) Safe Electrical working procedures(prevention of electrical shock etc)
- h) Maintenance of Electrical system including generators

MODULE IV : Safe working practices,Emergencies and communication (5 Marks)

- a) Safe practices for commonly used hand tools
- b) Safe practices while working in Engine room
- c) Precautions during hot work and enclosed space entry
- d) Safe practices during dry docking

MODULE V : Prevention of pollution (5 Marks)

- a) Rules for chemical,oil,sewage,garbage discharge as per IV act
- b) Oil mixture treatment equipment
- c) 15 PPM bilge alarm
- d) Oil water separator/oil record book
- e) Sewage treatment plant

MODULE VI : Firefighting appliances and life saving appliances (10 Marks)

- a) Classes of fire/Fire triangle/Fire alarm /Fire DRILL
- b) Types of portable fire extinguishers and fire fighting equipment/hoses /nozzles
- c) Fixed fire fighting installation – co2 flooding/sprinklers etc
- d) SCBA
- e) Survival crafts – life rafts and launching procedure/life boats

- f) General emergency alarm/Abandon ship signal
- g) Personal life saving appliances- life buoy/life jacket etc

MODULE VII : Watch keeping and engine room log book (5 Marks)

- a) Responsibilities of watch keeper
- b) Log book entry
- c) Guidance regarding fitness for duty
- d) Basic computer skills

MODULE VIII : General and Marine Engineering (Nature of duty) (5 Marks)

- a) Types of Fasteners (eg.Bolts,screws,studs and their threads)
- b) Measuring instruments { Eg. Micrometers,Feeler guage,thermometer,calipers,pressure guage etc)
- c) Types of Valves/cocks and its functions
- d) Quick closing valves
- e) Types and working principle of pumps (eg. Centrifugal pump,positive displacement pump, gear pump)
- f) Pipe fittings/Welding process
- g) Diesel engines – cycle of two and four stoke diesel engines
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- i) Parts of engines (eg. Engine block, cylinder head, connecting rod,crank shaft, cam shaft piston, piston rings ,main bearings, cylinder liners etc)
- j) Turbo charger/water cooled engines
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- m) Cranking
- n) Types of propellers and rudders
- o) Steering system

MODULE IX : Repairs and maintenance (Nature of Duty) (10 Marks)

- a) Precautions prior to machinery maintenance
- b) Fuel leak – action
- c) Diesel/petrol engine maintenance – routines/breakdown/overhauling
- d) Propeller/Rudder drop measurement

MODULE X : Survey repair and drydocking (Nature of Duty) (5 Marks)

- a) Surveys in dry docking/UT testing etc
- b) Inspection during surveys
- c) Painting of hull
- d) Cathodic protection
- e) NDT

PART II

**General Knowledge, Current Affairs and Renaissance in
Kerala – 20 Marks**

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General Knowledge

Facts about India

Geography of India – Physical features – Climate – Soils – Rivers – Famous sites – etc.

Demography – Economic and social development – Poverty alleviation – Economy and planning – etc.

History of India – Period from 1857 to 1947 – National movement

Facts about Kerala

Geographical Facts – Physical features – Climate – Soils – Rivers – Famous sites – etc.

Renaissance in Kerala

Important Events/Movements/Leaders

Brahmananda Swami Sivayogi, Chattampi Swami, Sree Narayana Guru, Vagbhatananda, Thycaud Ayya, Ayya Vaikundar, Poikayil Yohannan (Kumara Guru), Ayyankali, Pandit Karuppan, Mannathu Padmanabhan, V. T. Bhattathirippad, Dr. Palpu, Kumaranasan, Vakkom Moulavi, Blessed Kuriakose Elias Chavara, Etc.

Current Affairs

Important world, national and regional events related to the political and scientific fields, sports, cinema and literature etc.

NOTE: - It may be noted that apart from the topics detailed above, questions from other topics prescribed for the educational qualification of the post may also appear in the question paper. There is no undertaking that all the topics above may be covered in the question paper.