The Inland Vessels (Grant of Certificate of Competency to Engineers and Engine Drivers) (Orissa) Rules, 1989

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The Inland Vessels (Grant of Certificate of Competency to Engineers and Engine Drivers) (Orissa) Rules, 1989

Rule
THE-INLAND-VESSELS-GRANT-OF-CERTIFICATE-OF-COMPETENCY-
of 1989

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The Inland Vessels (Grant of Certificate of Competency to Engineers and Engine Drivers) (Orissa) Rules, 1989Published vide Notification Orissa Gazette Extraordinary No. 557/6-4-1989-Notification No. 1940-IWT/11/ 89-Com./21.2.1989No. 1940-IWT/H/89-Com. - Whereas the draft of the Inland Vessels (Grant of Certificate of Competency to Engineers and Engine Drivers of Inland Vessels) (Orissa), Rules, 1988 was published as required by Section 74 of the Inland Vessels Act, 1917 (1 of 1917) in the notification of the Government of Orissa in the Commerce and Transport (Commerce) Department No. 8736-IWT-14/88-Commerce, dated the 26th August, 1988, in the Orissa Gazette No. 42, dated the 10th October, 1988 inviting objections and suggestions from all persons likely to be affected thereby till the expiry of a period of thirty days from the date of publication of the said notification in the Orissa Gazette;And whereas objections or suggestions received with respect of the said draft have been considered by the State Government;Now, therefore, in exercise of the powers conferred by Section 29 of said Act, the State Government do hereby make the following rules, namely:

1. Short title and commencement.

(1)These rules may be called the Inland Vessels (Grant of Certificate of Competency to Engineers and Engine Drivers) (Orissa) Rules, 1989.(2)They shall come into force on and from the date of their publication in the Orissa Gazette.

2. Definitions.

(1)In these rules, unless the context otherwise requires-(a)"Act" means the Inland Vessels Act, 1917;(b)"brake horse-powers" means brake horse-power per cylinder as equal to 0.45 (D+S) (D-1.18) where 'D' denotes diameter of cylinder in inches and 'S' stroke in inches;(c)"candidate" means a candidate desirous of obtaining a certificate of competency;(d)"certificate of competency" means a certificate of competency granted under the rules to act as an engineer or engine driver on board of an inland mechanically-propelled vessel;(e)["Directorate" means the Directorate of Ports and Inland Water Transport, Orissa, Bhubaneswar.] [Substituted vide O.G.E. No. 177 dated 18.1.2008.](f)"Examiner" means an Examiner appointed as such by the State Government under Section 20 of the Act;(g)"Form" means a Form appended to these rules;"nominal horse-power" shall be construed as equivalent to 5.65 brake horse-power;(h)"Government" means the Government of Orissa.(2)All other words and expressions used but not defined under these rules shall have the same meaning respectively assigned to them in the Act.

3. Certificate of competency.

- Certificate of competency shall be granted to persons who pass the requisite examination conducted for the purpose in the Directorate under these rule.

4. Conduct of examination.

- The examination shall be conducted by the Examiner once in a year normally in the month of November.

5. Commencement of examination.

- The date of examination and the programme shall be notified by the [Executive Engineer (Mech.), Ports & I.W.T., North Division, C.D.A., Bidanasi, Cuttack] [Substituted vide O.G.E. No. 177 dated 18.1.2008.] at least thirty days before the date fixed for such examination in consultation with the Examiner.

6. Application for appearing in the examination.

- Every candidate shall submit the following particulars to the [Executive Engineer (Mech.), Ports & I.W.T., North Division, C.D.A., Bidanasi, Cuttack] [Substituted vide O.G.E. No. 177 dated 18.1.2008.] not later than seven days before the date of commencement of the examination-(i)an application in Form 'A' for permission to appear at the examination which shall be filled up at the [Office of the Executive Engineer (Mech.), Ports and Inland Water Transport North Division, C.D.A., Bidanasi, Cuttack] [Substituted vide O.G.E. No. 177 dated 18.1.2008.];(ii)testimonials and discharge certificates, if any, in original, certificates regarding character sobriety, experience, ability and good conduct on board ship and inland vessels for at least the last twelve months of his service preceding the date of his application from the employer or from a Gazetted Officer or from the officers of the

Paradip Port Trust in case of unemployed candidates for permission to appear at the examination;(iii)the prescribed examination fees; and(iv)the certificate of birth or, in the absence of such certificate, any other authentic evidence as to his age.(2)No candidate shall be permitted to appear at the examination unless the candidate fulfils the conditions laid down in the preceding sub-rule.

7. Fitness certificate.

- The candidates are required to produce a medical certificate from any of the Port Health Officers or from a Medical Officer of not below the rank of an Assistant Surgeon that they are medically fit to carry out jobs on board inland vessels/port crafts etc.

8. Granting of certificate of competency as second class engine driver.

(1)Candidate shall not be admitted to the examination for granting of certificate of competency as second class engine driver, unless the candidate-(i)has passed the medical test;(ii)has attained twenty-one years of age as on the date of examination;(iii)fulfils the conditions prescribed under Rule 6; and(iv)is able to read and write Oriya or Hindi and English languages.(2)Candidate must fulfil any of the following eligibility criteria, namely:(i)he must have served for a period of not less than three years as an apprentice in an approved marine workshop and have served for six months in the engine room of a mechanically propelled vessel having engine of not less than 85 brake horse-power or nine months in a vessel having an engine of not less than 40 brake horse-power; or(ii)he must have served for a period of not less than four years in the engine room of a mechanically-propelled vessel having engine of not less than 226 brake horse-power, of which period not less than one year must have served as Serang, principal tindal or chief greaser; or(iii)he must have served for a period of not less than five years in the engine room of a mechanically-propelled vessels having engine of not less than 85 brake horse-power or six years in the engine room of a vessel having not less than 40 brake horse-power of which period not less than one year must have been as Serang, tindal or chief greaser ; or(iv)he must have served at least six months with a second class engine driver's certificate for mechanically-propelled vessel or a certificate of higher grade in engine room of a mechanically-propelled vessel having engines of not less than 85 brake horsepower, or for nine months in a mechanically propelled vessel having engines of not less than 40 brake horse-power ; or(v)he must have served for at least two years, whilst in possession of permit as an engine driver of an inland mechanically propelled vessel having engines of 40 brake horse-power or under, followed by three years service in the engine room or a mechanically-propelled vessel having engine of more than 40 brake horsepower as Serang, tindal or chief greaser :Provided that if the candidate produces proof of longer service with a permit in launches having engines of 40 brake horse-powers, he may be allowed at the rate of one year in lower powered launches in lieu of six months' service in high-powered launches with a maximum remission of eighteen months. The service to count for remission must be in excess of two years required in launches of 40 brake horse-power or under ;(3)(i)he must satisfactorily pass a viva voce examination on the working of the various types of internal combustion engines and be able to name the principal parts of the machinery;(ii)he must know what attention is required for the various parts of the machinery understand the use and the management of different valves, cooks, pipes and

connections, and be familiar with the various methods of supplying air and fuel to the cylinders;(iii)he must be able to describe the chief causes which may make the engine difficult to start and to explain how he would proceed to rectify and remove the defects connected therewith. He must also be able to show that he understands the mechanism of the starting and reversing arrangements and that he is competent to deal with the defects therein;(iv)he must be able to overhaul the engine, to adjust the working parts and to put the engine together again in a good working condition. He must also understand how to make good the result of ordinary wear and tear to the machinery and how to correct defects so as to prevent accidents;(v)he must be familiar with the nature and properties of the various fuel used in the internal combustion engines. He must understand what is meant by 'flash point' and the danger that may arise in connection with a low flash point;(vi)he must know the danger resulting from leakage from the fuel tanks and must be aware of the precautions to be taken against explosion. He must also be able to take the necessary precautions to guard against the escape of inflammable vapour from the vapourizer when the engines are stopped. He must know how to deal with fire, if it breaks out;(vii)he must also be able, if required, to show his practical knowledge by actually working upon the engines of a mechanically-propelled vessel in the presence of the Examiner.

9. Certificate of competency as first class driver.

(1)Candidate shall not be admitted to the examination for certificate of competency as first class driver, unless the candidate-(i)has passed the medical test;(ii)has attained twenty-two years of age on the date of the examination;(iii)fulfils the conditions prescribed under Rule 6 ; and(iv)is able to read and write Oriya or Hindi and English languages and has served for at least five years on sea or on inland water.(2)Candidate must have possessed the following qualifications :(a)he must have served for a period of not less than one year as an engine driver on regular watch on the main engines of a mechanically-propelled vessel of not less than 565 brake horse-power whilst holding a second class engine driver's certificate for mechanically-propelled vessels; or(b)he must have served for a period of not less than eighteen months as second class driver with a second class engine driver's certificate for mechanically-propelled vessels in charge of a watch on the main engines of mechanically-propelled vessel of not less than 226 brake horse-power; or(c)he must have served for a period of not less than four years in the engine room of a mechanically-propelled vessel of not less than 226 brake horse-power, of which a period not less than one year must have been served as a chief greaser, Serang or Principal tindal whilst holding a second class engine driver's certificate for mechanically-propelled vessels. If the mechanically-propelled vessel is of not less than 170 brake horse-power, he must have served at sea or on inland water for a period of not less than five years in such vessel, of which not less than two years must have been served as a Serang, Principal oilman or Chief greaser whilst holding a second class engine driver's certificate for mechanically propelled vessel.; or(d)he must have served for a period of not less than eighteen months with a second class engine driver's certificate for mechanically-propelled vessels as driver in charge of the engine of a mechanically-propelled vessel of not less than 113 brake horse-power ; or(e)he must have served for a period of not less than two years as a Serang, Principal tindal or Chief greaser whilst holding a second class engine driver's certificate form a vessel, in a mechanically-propelled vessel of not less than 226 brake horse-power; or(f)he must have served for a period of not less than three years in charge of the engine of mechanically-propelled vessels of not less than 226 brake horse-power of

factory or mill as Assistant Engineer Serang, Principal tindal or Chief greaser whilst holding a second class engine driver's certificate for mechanically-propelled vessel under a certificated engineer and also for a period of not less than one year in the engine room of a mechanically-propelled vessel of the same brake horse-power ; or(g)he must have served for a period of not less than two years as engine driver on a regular watch on the main engines of a mechanically-propelled vessel of not less than 226 brake horse-power whilst holding a first class engine driver's certificate granted under the Act; or(h)he must have served for a period of not less than four years as engine driver on regular watch on the main engines of a mechanically-propelled vessel of not less than 226 brake horse-power whilst a second class engine driver's certificate granted under the Act; or(i)he must hold an engine driver's certificate for sea-going ships granted under the Indian Merchant Shipping Act, 1958, and must have served on regular watch on the main engines of a mechanically-propelled vessel of not less than 226 brake horse-power for a period of not less than one year.(3)He must pass a-(a)written test in Mathematics and General Engineering knowledge as per Syllabus provided in Schedule 'A';(b)viva voce test as required for second class driver's certificate under Clause (i) of Sub-rule (3) of Rule 8.

10. Certificate of competency as Inland Engineer.

(1)Candidate shall not be admitted to the examination for certificate of competency as Inland Engineer, unless the candidate-(i)has passed the medical test;(ii)has attained twenty-two years of age on the date of examination;(iii)fulfils the conditions prescribed under Rule 6 ; and(iv)is able to read and write Oriya and Hindi or English languages.(2)Candidate must have possessed the following qualifications:(1)(a)he must have served for a period of not less than four years as an apprentice engineer or journeyman at the making, fitting and repairing of mechanically propelled or motor engineer such as would be recognised as affording useful training for a marine engineer.Period served before the age of fifteen will not be accepted. Not less than three years of this period must have been spent at fitting, the erecting or repairing internal combustion engines. The remaining year must have been spent either wholly or in part on work of this nature, or at any Government Technical School or the Crew Training Institute, Chandbali, Orissa.Service as journeymen will be considered as equivalent to apprenticeship, but no time served before attaining the age of fifteen will not be accepted.Workshop service other than the above may be accepted, if it is considered useful training for a motor engineer but all such cases must be submitted to the [The Director, Ports and Inland Water Transport, Orissa, Bhubaneswar] [Substituted vide O.G.E. No. 177 dated 18.1.2008.] for consideration before the candidate is examined, and at least an additional three months of qualifying services on marine internal combustion engines either in the works or on regular watch in the main engine room of vessels propelled by these engines must have been performed in respect of each twelve months of workshop service of this nature, or other than on the working or repairing of internal combustion engines so accepted. If the service is not altogether satisfactory, a longer additional period than that may be required.Any deficiency in the requisite four years workshop service may be made up by service at least on regular watch in the main engine room of a vessel of not less than 565 brake horse-power propelled by internal combustion engines :Provided that in case of a sea-going vessel one and halt times the period of deficiency must be served and in case of an inland vessel, two and a quarter times the period of deficiency must be served on such vessel. A candidate who has no workshop service must have experience of six years

in a sea-going vessel or nine years in an inland vessel in lieu of his apprenticeship;(b)In addition to the workshop service as described above or alternative service afloat the candidate must have spent eighteen months at sea as an engineer on regular watch on the main engines of a sea-going vessel propelled by internal combustion engines of not less than 565 brake horse-power or twenty-seven months in a similar inland vessel;(ii)he must be able to write in a legible manner and have good knowledge of arithmetic up to and including vulgar and decimal fractions and square root. He must also be able to work out questions relating to spring or level loaded safety and relief valves, consumption of oil and stores, capacities of tanks, bunkers, etc., speed of vessels and other similar problems, and be able to calculate suitable working pressures for air receivers of given dimensions, and the stress per square inch on crank and tunnel shafts and other parts of the machinery when the necessary date is furnished;(iii)he must be able to give a clear explanation of the principles on which oil gas or other internal combustion engines work, including the methods of ignition, to point out the differences between them, and to show by means of illustrative sketches and otherwise that he understands the details of the construction of these in general uses;(iv)he must be familiar with the various methods of supplying air and fuel to the cylinders in the different types of engines, the construction of the apparatus for carburetting, atomissing, or gasfying the fuel, and the means for cooling the cylinder, piston, etc.;(v)he must have a satisfactory knowledge of the process employed in the construction of internal combustion engines in the workshop and of the methods used in fitting the machinery on board ship ;(vi)he must know what attention is required by the various parts of the machinery and understand the use and management of the different valves, cooks, pipes and connections;(vii)he must be able to state and describe the chief causes which may make the engine difficult to start and to explain how he would proceed to remedy and remove the defects arising therefrom. He must also be able to show that-he understands the mechanism of the starting and reversing arrangements, and is competent to deal with the defects therein ;(viii)he must understand how-to make good the results of ordinary wear and tear to the machinery, how to test the fairness of shafting etc., how to correct defects from accident, delay etc., and how a temporary or permanent repair could be made in case of disorder or total breakdown;(ix)he must understand the construction of the pressure gauge, barometer, thermometer and other instruments use in the engine room and the principal plea on which they work ;(x)he must understand the construction and working of centrifugal bucket, and plunger pumps and the principles on which they work;(xi)he must understand the construction and working of air compressors, gas producer, steering engines, electric light engines and dynamos, electric motor, refrigerating hydraulic and other auxiliary machinery found on board ships;(xii)he must possess a good working knowledge of the construction and management of auxiliary steam boilers and machinery and be familiar with the prominent facts relating to, combustion;(xiii)he must be familiar with the nature and properties of the various oils etc., generally used in internal combustion engines, must understand what is meant by 'Flash Point' and have a knowledge of the explosive properties of the gas or vapour given off by those oils etc., when mixed with definite quantities of air and be thoroughly conversant with the danger of exploding such gas or vapour to a naked light, or of allowing any leakage from the oil tanks particularly into the vessels bilges and unvantilated spaces or from gas producers, pipes, vapourizers, etc.;(xiv)he must thoroughly understand the precautions to be taken against fire or explosion from oil or gas and know how to deal with fire if it breaks out. He should also be familiar with the action of wire gauge diaphrams when placed in pipes and connected to oil tanks etc. for the purpose of preventing the explosion or ignition or oil vapour therein;(xv)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;(xvi)he must able to take off and calculate indicator diagrams aid understand the action of the gas in the cylinder as shown thereby;(xvii)he must be able to make a dimensioned working sketch drawing of and single part of the machinery.(3)He must pass a written examination and viva voce test as per the syllabus provided in Schedule 'B'.

11. Report of Examiner for grant of certificate of competency.

- If the candidate satisfies the Examiner as to his knowledge of the subjects and competency to act as an engineer or as an engine driver of an inland vessel, his name shall be recommended by the Examiner to the Directorate for grant of necessary certificate of competency.

12. Examination fees.

- [(1) Every Candidate shall pay the following examination fees for appearing at the examination required under Sub-rule (2) of Rule -6

Inland Engineer	....	Rs.2007-
First Class Driver	....	Rs.1607-
Second Class Driver	....	Rs.1007-]

[Substituted vide O.G.E. No. 1100 dated 6.6.2008.](2)Examination fee once paid shall under no circumstances be refunded.

13. Issue of certificate of competency.

- Certificate of competency of Inland Engineers, first class drivers and second class drivers shall be in Forms 'B', 'C' and 'D' respectively.

14. General.

- Every certificate of competency shall be made in duplicate of which one copy shall be delivered to the candidate and the other shall be kept on record by [The Executive Engineer (Mech.), Ports & I.W.T., North Division, C.D.A., Bidanasi, Cuttack.] [Substituted vide O.G.E. No. 177 dated 18.1.2008.]

15. Repeal and savings.

- The Inland Vessels (Grant of Certificate of Competency to Engineers of Vessels of less than Forty Horse-Power), (Orissa), Rules, 1980 so far it relates to the engine drivers are hereby repealed:Provided that anything done or any action taken under the said rules so repealed shall be deemed to have been done or taken under the corresponding provisions of these rules.Form 'A'[See Rule 6 (1) (I)]Application for certificate of competency to act as engineer/ engine driver of inland

mechanically-propelled vessel plying in rivers, canals, ports and estuaries of tidal waters in the State of OrissaNote. - The applicants shall submit this Form duly filled in alongwith the necessary certificates for permission to appear at the examination to the [The Executive Engineer (Mech.), Ports & I.W.T., North Division, C.D.A., Bidanasi, Cuttack.] [Substituted vide O.G.E. No. 177 dated 18.1.2008.]A. Name etc.

1. Name in full...

2. Surname...

3. Nationality...

4. Permanent address...

5. Date of birth...

6. Where born...

B. Particulars of all previous certificates (if any)-

1. Number...

2. Competency of service...

3. Grade...

4. Where issued...

5. Date of issue...

6. If at any time suspended or cancelled by Court or authority...

7. Date...

8. Cause...

C. Certificate now required-

1. Grade...

2. Competency...

D. Have you appeared for this examination earlier, if 'yes' mention year... Yes/NoE. Declaration to be made by applicant:N.B.-Any person who makes, procures to be made or assists in making any false representation for the purpose of obtaining for himself, or any other person, a certificate either of competency or service, is for each offence liable to be punished for cheating under Section 420 of the Indian Penal Code and also for knowingly giving false information to the public servant under Section 182 of the Indian Penal Code.DeclarationI do hereby declare that the particulars contained in divisions A, B, C, D and E of this Form are correct and true to the best of my knowledge and belief, and that papers enumerated in division G and sent with this Form are true and genuine documents, given and signed by the persons whose names appear on them. I further declare that the statement G contains a true and correct account of the whole of my services without exception,;And I make this declaration conscientiously believing the same to be true, signed in the presence of the [The Executive Engineer (Mech.), Ports & I.W.T., North Division, C.D.A., Bidanasi, Cuttack.] [Substituted vide O.G.E. No. 177 dated 18.1.2008.]Signature of the applicantPresent address.....Date.....F. [Certificate of the The Executive Engineer (Mech.), Ports & I.W.T., North Division, C.D.A., Bidanasi, Cuttack.] [Substituted vide O.G.E. No. 177 dated 18.1.2008.]:The declaration E above was signed in my presence and the fee of Rs.....received by me.Date.....[The Executive Engineer (Mech.),Ports & I.W.T., North Division,C.D.A., Bidanasi, Cuttack.] [Substituted vide O.G.E. No. 177 dated 18.1.2008.][The Executive Engineer (Mechanical) Ports & IWT, North Division, CDA, Sector-6, Bidanasi, Cuttack will scrutiny the forms etc. of the applicants and forward the same to the Director, Ports & IWT, Orissa, Bhubaneswar along with testimonials and other allied documents if any for necessary approval.] [Substituted vide O.G.E. No. 1100 dated 6.6.2008.]G. List of testimonials and statement of service on shore and sea:

1. If service on board ship-

(i)No. of testimonials/certificates (if any).....(ii)Name of the ship where employed.....(iii)Horse-power of the engine on which worked.....(iv)Port of registry and official No. of the ship.....

2. Service particulars of the applicant-

(i)Capacity.....(ii)Date of appointment.....(iii)Date of termination/leaving.....(iv)State, if continuing.....(v)Total period served-(a)Years.....(b)Months.....(c)Days.....(vi)Total service.....(vii)Total service on shore.....(viii)Period served for which certificates are now produced.....(ix)Period served for which no certificates are produced.....H. Certificate of the Examiner:[The examiner should fill up divisions H & I & forward this form to the Director, Port & IWT, Orissa, Bhubaneswar alongwith the testimonials and other certificates if any with this form. The new certificates and the testimonials of the applicant shall be delivered to him at the Directorate of Ports & IWT, Orissa, Bhubaneswar.] [Substituted vide O.G.E. No. 1100 dated 6.6.2008.]

1. Date and place of examination.....

2. Insert passed or failed against each item below :

(i)In working out the questions.....(ii)In the viva voce examination.....

3. Rank for which passed.....

I. Personal description of applicant:

1. Height.....

Metres..... Centimetres.....

2. Complexion.....

3. Personal marks or peculiarities, if any.....

4. Colour of (a) Hair.....

(b)Eyes.....I hereby certify that the particulars contained in Divisions H and I are correct.Date.....Signature of ExaminerForm 'B'[See Rule 13]Certificate of competency to act as Inland Engineer of an Inland VesselToWhereas, it has been recommended by the Examiner appointed under Section 20 of the Inland Vessels Act, 1917 that you have been found, after examination, duly qualified to act as inland engineer of an inland mechanically-propelled vessel under the said Act, I do hereby, in pursuance of Section 21 of the said Act, grant you this certificate of competency to act as Inland Engineer to ply in the rivers, canals, ports and estuaries of tidal waters in the State of Orissa.Given under my hand and seal[Director, Ports & I.W.T., Orissa, Bhubaneswar.] [Substituted vide O.G.E. No. 177 dated 18.1.2008.]The.....day.....of.....No. of certificate.....Address of certificate-holder.....Date and place of birth.....Signature.....Issue at.....on the.....date.....20.....Registered[The Executive Engineer (Mech.),Ports & I.W.T., North Division, C.D.A., Bidanasi, Cuttack.] [Substituted vide O.G.E. No. 177 dated 18.1.2008.]Notes - (1) Any Inland Engineer who fails to hand over the certificate which has been cancelled or suspended is liable to a penalty up to Rs. 500 (Rupees five hundred).(2)Any person other than the certificate-holder who comes in possession of this certificate, is required to transmit it forthwith to the [Director, Ports & I.W.T., Orissa, Bhubaneswar.] [Substituted vide O.G.E. No. 177 dated 18.1.2008.]Form 'C'[See Rule 13]Certificate of competency to act as first class Driver of an Inland VesselToWhereas, it has been recommended by the Examiner appointed under Section 20 of the Inland Vessels Act, 1917 that you have been found, after examination, duly qualified to act as first class Driver of an inland mechanically-propelled vessel having engines of forty Nominal Horse-Power (226 B.H.P.) and above but less than one hundred Nominal Horse-Power (565 B.H.P.) I do hereby, in pursuance of Section 21 of the said Act, grant you this certificate of competency as First Class Driver to ply in the rivers,

canals, ports and estuaries of tidal waters, in the State of Orissa.Given under my hand and seal[Director, Ports & I.W.T., Orissa, Bhubaneswar.] [Substituted vide O.G.E. No. 177 dated 18.1.2008.]The day of.....No. of certificate as first class Driver of an inland vessel bearer.son of.....by caste.....Date and place of birth (showing village, thana and district).....Residence (showing village, thana and district).....personal description stating particularly and permanent marks or scares.....Height.....Date of examination Number of Register Ticket.Signature.....issued at.....on the.....date of.....20.Registered[The Executive Engineer (Mech.),Ports & I.W.T., North Division, C.D.A., Bidanasi, Cuttack.] [Substituted vide O.G.E. No. 177 dated 18.1.2008.]Notes - (1) Any first class Driver who fails to deliver up a certificate which has been cancelled or suspended is liable to penalty up to Rs. 500 (Rupees five hundred).(2)Any person other than the holder of this certificate who comes in possession of this certificate is required to transmit it forthwith to the [Director, Ports & I.W.T., Orissa, Bhubaneswar.] [Substituted vide O.G.E. No. 177 dated 18.1.2008.]Form 'D'[See Rule 13]Certificate of competency to act as second class Driver of an Inland Vessel under Act 1 of 1917ToWhereas, it has been recommended by the Examiner appointed under Section 20 of the Inland Vessels Act, 1917 that you have been found after examination, duly qualified to act as second class Driver of an inland vessel having engines of less than forty Nominal Horse-Power (226 B.H.P.), I do hereby in pursuance of Section 21 of the said Act, grant you this certificate of competency as Second Class Driver to ply in the rivers, canals, ports and estuaries of tidal waters, in the State of Orissa.Given under my hand and seal[Director, Ports & I.W.T., Orissa, Bhubaneswar.] [Substituted vide O.G.E. No. 177 dated 18.1.2008.]The day of.....No.....of certificate as first class Driver of an inland vessel bearer.son of.....by caste.....Date and place of birth (showing village, thana and district).....Residence (showing village, thana and district).....personal description stating particularly and permanent marks or scares.....Height.....Date of examination Number of Register Ticket.Signature.....issued at.....on the.....date of.....20.Registered[The Executive Engineer (Mech.),Ports & I.W.T., North Division, C.D.A., Bidanasi, Cuttack.] [Substituted vide O.G.E. No. 177 dated 18.1.2008.]Notes - (1) Any first class Driver who fails to deliver up a certificate which has been cancelled or suspended is liable to penalty up to Rs. 500 (Rupees five hundred).(2)Any person other than the holder of this certificate who comes in possession of this certificate is required to transmit it forthwith to the [Director, Ports & I.W.T., Orissa, Bhubaneswar.] [Substituted vide O.G.E. No. 177 dated 18.1.2008.]

'A'

Syllabus for examination of first class DriversThe written examination shall consist of one paper of three hours duration consisting of the following subjects. Candidate securing forty per cent of the total marks will be deemed to have passed the Written Test.

1. Elementary Mathematics-

(a)Addition, Subtraction, Multiplication, Decimals and Vulgar Fractions.(b)Powers and roots of numbers. Ratio and Proportion, Percentages, Direct and Inverse Variation, Averages.(c)Areas and perimeters of a rectangle, triangle and circle, volumes and surface areas of box shaped bodies, cylinders, pyramids, cones and spheres, Simposon's First and Second Rules. To find out the area of

water planes and displacement of boats and different droughts in sea water and fresh water by Simposon's rules as well as by using area co-efficient and prismatic co-efficient.(d)Solutions of simple equations, involving use of given formulae, re-arrangement of given formulae.(e)To calculate the T.P.I. in sea water and in fresh water.(f)To find out the carrying capacity of the boat.

2. Engineering knowledge-

Section A-(General Science) 20 Marks

(i)Fundamental units(ii)Density and specific gravity(iii)Parallelogram of forces(iv)The Triangle of forces(v)Moments and levers(vi)Parallel forces(vii)Centre of gravity(viii)Stress and strain(ix)Friction(x)Work(xi)Temperature scales(xii)Quantity of heat and specific heats(xiii)Quantity of electricity and Faraday's Laws of Electrolysis(xiv)Resistivity(xv)(a)OHM's Law(b)The measurement of resistance by the Ammeter/Voltmeter Method

Section B-Marine Engineering 40 Marks

(i)Working principle of Marine Engine(ii)Difference in between I.C. Engine and E. C. Engine(iii)Name of principal parts of machineries(iv)Knowledge of what attention is required by the various parts of the machinery use and maintenance of valves, cock, pipes and connections and familiar with the various methods of supplying air and fuel to the cylinders(v)Cause of defects and their rectification(vi)Complete overhauling of the Marine Engines(vii)Nature of the properties of the various fuel used in internal combustion engines(viii)Precaution against fire and explosions due to oil vapour or gas, flash point. The danger of oil leakage. Precautions while bunkering(ix)Construction, operation and maintenance of fire fighting appliances(x)Lay out and working of electric light installation and battery installations(xi)Dry docking including repairs to the propeller, tail shaft ruddar and sea connections, stern tubes, shaft brackets(xii)Alignment of shaft(xiii)Calculations pertaining to speed consumption of fuel and fresh water for a given voyage(xiv)Arrangements for pumping out bilges(xv)Preparation of defect list(xvi)Utilisation and maintenance of life saving appliances(xvii)Able to draw free hand sketches of machine and engine parts(xviii)Maintaining procedure of engine log book.

3.Engineering drawing 20 Marks

Use of drawing instruments, reading of blue prints and able to draw the sketches of various parts of the engine.

'B'

Hour for examination of inland engineersThe written examination shall consist of the paper of three hours duration comprising of the following objects. Candidate securing forty per cent of the total marks will be deemed to have passed the Written Test.

1. Elementary Mathematics -

(a)Addition, Subtraction, Multiplication, Division, Decimals and Vulgar Fractions.(b)Powers and roots of numbers, Ratio and Proportion, Percentages, Direct and Inverse variation averages.(c)Areas and perimeters of a rectangle, triangle and circle, volumes and surface areas of box shaped bodies, cylinders, pyramids, cones and spheres, Simpson's First and Second Rules, Practical applications

involving use of the above. To find out the area of water planes and displacement of boats at different draughts in sea water and fresh water, by Simpson's rules as well as by using area co-efficient and prismatic co-efficient.(d)Solutions of simple equations, involving use of given formulae rearrangement of given formulae.(e)To calculate the T.P.I. in sea water and in fresh water.(f)Difference of draughts when boat moves from sea water to fresh water or vice versa.(g)To find out the carrying capacity of the boat.

2. Engineering knowledge-

Section A-(General Science) 20 Marks

(i)Fundamental units(ii)Density and specific gravity(iii)Parallelogram of forces(iv)The Triangle of forces(v)Moments and levers(vi)Parallel forces(vii)Centre of gravity(viii)Stress and strain(ix)Friction(x)Work(xi)Temperature scales(xii)Quantity of heat and specific heats(xiii)Quantity of electricity and Faraday's Laws of Electrolysis(xiv)Resistivity(xv)(a)OHM's Law(b)The measurement of resistance by the Ammeter/Voltmeter Method.

Section B - 40 Marks

(i)Principles of working, construction, operation and maintenance of two stroke and four stroke internal combustion engines (supercharged and naturally aspirated) used on board ship, with particular reference to starting and reversing arrangements and safety devices(ii)General uses and application of various materials used in machinery on board inland vessels(iii)The construction, use and principles involved in the action of pressure gauge, thermometer, pyrometer and other measuring instruments commonly used on board ships(iv)Construction, operation and maintenance of centrifugal, bucket and gear type pumps(v)Lay-out and operation of bilge, ballast and fuel systems(vi)Construction, operation and maintenance of steering gears(vii)Lay-out and working of electric light and electric power installation with particular reference to safety devices(viii)Construction and care of starting air vessels including mountings(ix)Construction and operation of refrigerating plant(x)Estimation of fuel, lubricating oil and water consumption for given voyage(xi)Work related to dry docking, including propeller, tail, shaft, ruddar sea connections, stern tube shaft-bracket(xii)Elements of boat construction(xiii)Precautions against fire and explosions due to oil vapour or gas, flash point. The danger of oil leakage, precautions while bunkering(xiv)Explosion in crank cases and starting air systems(xv)Construction, operation and maintenance of fire fighting appliances(xvi)Knowledge of statutory requirements concerning safety(xvii)Candidates will be expected to draw free hand sketches of machine and engine parts(xviii)Preparation or defect list and procedure of maintaining engine log book(xix)Use and maintenance of life saving appliances.

3.Engineering drawing 20 Marks

Use of drawing instruments, reading of blue prints, production of working drawings of machine and engine parts.