

**OPENNET – VI : Entrance Test for
Diploma in Nautical Science leading to B.Sc. (Nautical Science)
June, 2007**

Total No. of Questions = 100

Time : 3 Hours

- All questions are compulsory.
- Use of calculator is *not* allowed. Rough work may be done in the space provided at the back of the Test booklet.
- The Test booklet has the following 5 tests :

Tests	No. of Questions	Marks
I – Reasoning Aptitude	20	20
II – General Knowledge	20	20
III – Mathematics	20	20
IV – English	20	20
V – General Science	20	20

Read the instructions given on the OMR Answer Sheet carefully before you start.

HOW TO FILL UP THE INFORMATION ON THE ENTRANCE TEST OMR ANSWER SHEET

While filling up the OMR Answer Sheet, you should follow the following guidelines :

1. Write your complete Roll Number. This should correspond to the roll number already supplied to you. Also write your correct name, address with pin code in the space provided, in ink. Put your signatures on the Answer Sheet with date, in ink. Ensure that the Invigilator in your examination hall also puts his signatures with date on the OMR Answer Sheet at the space provided. You should use HB pencil to mark the answers of the questions on the OMR Answer Sheet.
2. Do not make any stray marks on the OMR Answer Sheet.
3. Write correct information in numerical digits in Roll No., Programme Code, Date and Month and Examination Centre Code Columns. **The column of Course Code should be left blank.** The corresponding rectangle should be dark enough and should be filled in completely.
4. Each question is followed by four probable answers which are numbered 1, 2, 3 and 4. You should select and show only one answer to each question considered by you as the most appropriate or the correct answer. Select the most appropriate answer. Then by using HB pencil, blacken the rectangle bearing the correct answer number against the serial number of the question. **If you find that answer to any question is none of the four alternatives given under the question you should darken the rectangle '0'.**
5. If you wish to change your answer, ERASE completely the already darkened rectangle by using a good quality eraser and then blacken the rectangle bearing your revised answer number. If incorrect answer is not erased completely, smudges will be left on the erased rectangle and the question will be read as having two answers by the Optical Mark Reader (OMR) and will be ignored for giving any credit.
6. No credit will be given if more than one answer is given for one question. Therefore, you should select the most appropriate answer.
7. You should not spend too much time on any one question. If you find any particular question difficult, leave it and go to the next. If you have time left after answering all the questions, you may go back to the unanswered ones.
8. There is no negative marking for wrong answers.

GENERAL INSTRUCTIONS

1. Mobile Phones, calculators, books, slide-rules, foot rulers, note-books or written notes, etc. are not allowed inside the examination hall.
2. You should follow the instructions given by the Centre Superintendent, observers and by the Invigilators at the examination venue. If you violate the instructions you will be disqualified.
3. Any candidate found copying or receiving or giving assistance in the examination will be disqualified.
4. The Test Booklet and the OMR Answer Sheet would be supplied to you by the Invigilators. **After the exam is over, you should hand over the Test Booklet and the OMR Answer Sheet to the Invigilator before leaving the examination hall.** Any candidate who does not return the Question Booklet and the OMR Answer Sheet will be disqualified.
5. Candidates arriving late will not be permitted to enter the examination hall. The reporting time is 9.15 A.M. The examination will start at 10.00 A.M. and will be over at 1.00 P.M.
6. All rough work is to be done on the test booklet itself and not on any other paper. Scrap paper is not permitted. For arriving at answers you may work in the margins, make some markings or underline in the test booklet itself.
7. The University reserves the right to cancel scores of any candidate who impersonates or uses malpractices. The examination is conducted under uniform conditions. The University would also follow a procedure to verify the validity of scores of all examinees uniformly. If there is substantial indication that your performance is not genuine, the University may cancel your score.

TEST V
GENERAL SCIENCE

81. Which of the following is a scalar quantity ?
- (1) Electric current
 - (2) Electric field
 - (3) Acceleration
 - (4) Linear momentum
82. A moving body is covering a distance in proportion to the square of time along a straight line. The acceleration of the body is
- (1) increasing
 - (2) decreasing
 - (3) zero
 - (4) constant
83. A particle projected horizontally from the top of a tower clears range equal to the height of the tower. The path described is a part of a
- (1) circle
 - (2) ellipse
 - (3) hyperbola
 - (4) parabola
84. A particle of mass m has momentum 'p'. Its kinetic energy will be
- | | |
|---------------------|----------------------|
| (1) mp | (2) $\frac{2p^2}{m}$ |
| (3) $\frac{p^2}{m}$ | (4) $\frac{p^2}{2m}$ |
85. When a torque acting upon a system is zero, which of the following will be constant ?
- (1) Force
 - (2) Linear momentum
 - (3) Angular momentum
 - (4) Linear impulse
86. Oxygen boils at -183°C . This is approximately
- | | |
|---------------------------|---------------------------|
| (1) -297°F | (2) -329°F |
| (3) -261°F | (4) -215°F |

87. The velocity of sound in any gas depends upon
- (1) wavelength of sound only
 - (2) density and elasticity of gas
 - (3) intensity of sound waves only
 - (4) amplitude and frequency of sound
88. To move a unit positive charge from one point to another point on an equipotential surface
- (1) work is done on the charge
 - (2) no work is done
 - (3) work done is a constant
 - (4) work is done by the charge
89. A metallic wire of resistance 40Ω is stretched to twice its length. Its new resistance would be approximately
- (1) 20Ω
 - (2) 80Ω
 - (3) 120Ω
 - (4) 160Ω
90. The magnetic field lines
- (1) intersect at the neutral point
 - (2) intersect near north and south poles
 - (3) cannot intersect at all
 - (4) depend upon the position of the magnet
91. The shape of methane molecule is
- (1) tetrahedral
 - (2) square planar
 - (3) trigonal
 - (4) linear
92. Which of the following would have the lowest pH value ?
- (1) Human blood
 - (2) Milk
 - (3) Lime water
 - (4) Vinegar
93. Haematite is an ore of
- (1) iron
 - (2) aluminium
 - (3) copper
 - (4) gold
94. Electrical fires are best extinguished using
- (1) water
 - (2) sand
 - (3) salt solution
 - (4) saw dust

- 95.** Alkali metals belong to
- (1) s-block (2) p-block
(3) d-block (4) f-block
- 96.** A double bond between 2 carbons consists of
- (1) 2 sigma bonds
(2) 2 pi bonds
(3) one sigma and one pi bond
(4) one sigma bond only
- 97.** Reaction $\text{Sn}^{2+} \rightarrow \text{Sn}^{4+} + 2e^{-}$ is an example of
- (1) Oxidation (2) Reduction
(3) Complexation (4) Polymerization
- 98.** The following gas forms a protective shield for UV radiation in the atmosphere :
- (1) Nitrogen (2) Hydrogen
(3) Ozone (4) Helium
- 99.** Soaps are sodium salts of
- (1) higher fatty acids (2) mineral acids
(3) phenol (4) glycerol
- 100.** Rust on iron is due to
- (1) iron oxides (2) iron sulphate
(3) iron chloride (4) iron phosphate