INDIAN MARITIME UNIVERSITY

(A Central University, Govt. of India**)**

May/June 2018 End Semester Examinations

DNS (Diploma in Nautical Science)

Semester I

Applied Electricity & Electronics (UD11T2103)

Date: 06.06.2018 **Max.Marks: 70**

Time: 2 Hrs **Pass Marks: 25**

Attempt any five questions out of Eight. All questions carry equalmarks.

Use of non programmable type Scientific Calculator is allowed.

Section A: Electricity

Question 1 is compulsory, attempt any 2 from Q.No. 2 to 4

1.(a) Show the circuits of resistances R1,R2,R3 connected in series and parallel. State the formula for equivalent resistance in both the cases. (5)

(b) Explain the heating effect of electric current with any two examples. (5)

(c) Explain the magnetic effect of electric current with any two examples. (5)

2.(a) State and explain Lenz's law of electromagnetic induction. Give its application on board ship. (5)

(b) With the help of constructional details explain the principle and working of DC generator. (5)

3.(a) State and explain potential hazards associated with use of high voltage electrical energy . (5)

(b) Explain the term "intrinsically safe" cable. Why special cables are used for earthing and bonding . (5)

4. Explain the parallel plate capacitor. Show the series and parallel combination of three capacitors. State the formula for equivalent capacitor in both the cases. Also write a formula for energy stored in capacitor. (10)

Section B: Electronics

Question 5 is compulsory, attempt any 2 from Q.No. 6 to 8

5. (a) Show the basic CE amplifier circuit with functions of each components. (5)

(b) Define voltage gain, power gain and current gain of amplifier. (5)

(c) Explain simple LC tank circuit. (5)

6. (a) With the help of block diagram and waveforms explain the process of amplitude modulation. (5)

(b) Explain why sound quality in Frequency modulation is better than A.M. (5)

7. (a) Define the logic gate circuit. Explain OR logic gate with symbol, logical expression and truth table. (5)

(b) What is L.E.D? Describe its working with constructional details. (5)

8. (a) With the help of block diagram explain the circuit of radio transmitter. (5)

(b) With the help of Block diagram explain the circuit of radio receiver. (5)