

**C-7017**

**Sub. Code**

**11F**

**COMMON FOR ALL U.G. DEGREE COURSES  
EXAMINATION, NOVEMBER 2022**

**First Year — First Semester**

**Part I — FRENCH**

**(2016 to 2018 onwards)**

Duration : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. La capitale de la France C'est \_\_\_\_\_ (Berlin/Paris)
2. Pour saluer le matin \_\_\_\_\_ (Bonfour/Merci)
3. Pour Lundi en englose \_\_\_\_\_ (Tuesday/Monday)
4. Nous \_\_\_\_\_ (I/we)
5. Name two monuments in France ?
6. Why is Paris is known as "VILLE LUMIERE"?
7. What is the currency of France ?
8. Why is the flag of France called "Tricolore"?
9. Why is France referred to as the "Hexagone"?
10. Ecrivez les nombres en lettres :
  - (a) 100 \_\_\_\_\_
  - (b) 200 \_\_\_\_\_

**Part B**

(5 × 5 = 25)

Answer **all** questions.

11. (a) Ecrivez les jours de la remanie.

OU

- (b) Ecrivez les mois de l'annee.

12. (a) Conjuguez le verbe "etre".

OU

- (b) Conjuguez le verbe "avoir".

13. (a) Conjuguez le verbe "Rester".

OU

- (b) Conjuguez le verbe "S"applier.

14. (a) Lister deractio en français.

OU

- (b) Liste hors saison en français.

15. (a) Enumerer Cinq Legumes en français.

OU

- (b) Enumerer Cinq fruits en français.

**Part C**

(3 × 10 = 30)

Answer **all** questions.

16. Ecrivez les nombres

- (a) 1 to 25

OU

- (b) 25 × 50

17. (a) Decrit un paya “france”.

OU

(b) Ecrivez dix couleurs en française.

18. (a) Presente toi en minimum 03 paragraphe.

OU

(b) Decrivez votre jeu préféré au minimum 03 paragraphe.

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C-7018

Sub. Code

11H

U.G. DEGREE EXAMINATION, NOVEMBER 2022

First Year/First Semester

Part I – Hindi

STORY, NOVEL, GRAMMAR AND TRANSLATION – I

(Common for all U.G. Degree Courses/First Semester)

(2016 to 2018 onwards)

Duration : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

सभी प्रश्नों के उत्तर संक्षेप में लिखिए।

1. आनन्दी ने लालबिहारी की क्या शिकायत की थी?
2. रामू की माँ ने क्यों पंडितजी के पैर पकड़े?
3. लहनासिंह ने नकली लपटन को कैसे पहचाना?
4. मोहनलालजी महतो 'वियोगी' का संक्षिप्त परिचय दीजिए।
5. उदयभानुलाल और कल्याणी के बीच झगड़ा क्यों हुआ?
6. निर्मला से रुक्मणि का व्यवहार कैसा था?
7. नयनसुखराम ने तोताराम को क्या सलाह दिया?
8. कृष्णा की शादी किससे हुई ? और क्यों?

9. लिंग बदलिए।  
(a) मालिक (b) कवि  
(c) ठाकुर (d) विधवा
10. वचन बदलिए  
(a) लड़की (b) आँख  
(c) जू (d) माला

**Part B**

(5 × 5 = 25)

सभी प्रश्नों के उत्तर दीजिए।

11. (a) बेनिमाधव सिंह से श्रीकंठ का व्यवहार कैसा था?  
या  
(b) मिसरानी का चरित्र-चित्रण कीजिए।
12. (a) 'उसने कहा था' - इस कहानी में किसने किससे क्या कहा था?  
या  
(b) 'पाँच मिनट' कहानी का संदेश क्या है?
13. (a) मंसाराम की मृत्यु का जिम्मेदार कौन हैं? स्पष्ट कीजिए।  
या  
(b) भुवनमोहन सिन्हा ने क्यों आत्महत्या कर लिया?
14. (a) सियाराम साधू के जाल में कैसे फँस गया?  
या  
(b) रंगीलीबाई का चरित्र-चित्रण कीजिए।

15. (a) सर्वनाम किसे कहते हैं? उनके भेदों को उदाहरण सहित समझाइए।

या

(b) पुल्लिंग से स्त्रीलिंग बनाते के नियमों को उदाहरण सहित समझाइए।

**Part C**

(3 × 10 = 30)

सभी प्रश्नों के उत्तर विस्तार से लिखिए।

16. (a) प्रायश्चित्त कहानी का सारांश लिखकर विशेषताएँ बताइए।

या

(b) निर्मला का चरित्र-चित्रण कीजिए।

17. (a) संज्ञा किसे कहते हैं? उनके भेदों को उदाहरण सहित समझाइए।

या

(b) विशेषण की परिभाषा देकर उसके भेदों को उदाहरण सहित समझाइए।

18. (a) पाँच मिनट कहानी का सारांश लिखिए।

या

(b) अंग्रेजी में अनुवाद कीजिए।

वही समाज श्रेष्ठ है और वही राष्ट्र सुखी है जिसकी जनता का चरित्र अच्छा हो। आज के बालक कल के नागरिक हैं। इसलिए उनके चरित्र का निर्माण करना समाज और राष्ट्र का पहला कर्तव्य है।

में पिताजी की बहुत इज्जत करता था। मैं उन्हें बल, साहस और होशियारी की मूर्ति समझता था और दूसरों के मुकाबले में उन्हें बहुत ही ऊँचा और बड़ा-चढ़ा पाता था।

कौए के संबन्ध में एक रोचक कथा है। कहते हैं, एक बार वह कोयल का बाना धारण करके चारों ओर लोगों की आँखों में धूल झोंकता फिरा। कई मास ऐसे ही बीते। जब वसंत आया, तो असली कोयल ने तो पंचम स्वर में गाना आरंभ कर दिया, पर कोयल चुप रहा।

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C-7016

Sub. Code

11T

U.G. DEGREE EXAMINATION, NOVEMBER 2022.

First Year / First Semester

Tamil – Part-I

தமிழ்ச் செம்மொழியும் தமிழர்களின் பன்முகத்திறனும்

(Common for all UG Degree courses)

(2016 to 2018 onwards)

Duration : 3 Hours

Maximum : 75 Marks

பகுதி அ

(10 × 2 = 20)

அனைத்து வினாக்களுக்கும் விடையளிக்கவும்.

1. தனிநிலைமொழி என்றால் என்ன?
2. தமிழைச் செம்மொழி என்று முதலில் கூறிய வெளிநாட்டு அறிஞர் யார்?
3. செம்மொழி நூல்களில் உள்ள இலக்கணநூல்களைக் கூறுக.
4. வண்ண ஆடை என்பதென்ன?
5. குழந்தைகளின் அணிகலன்களைக் குறிப்பிடும் இலக்கியச்சான்று ஒன்று காட்டுக.
6. தமிழ் இலக்கியங்கள் காட்டும் இசைக்கருவிகள் இரண்டினைச் சுட்டுக.
7. நடுகல் - குறிப்பு வரைக.
8. நாள், கோள் பற்றிய நம்பிக்கைகள் பண்டைக் காலத்தில் இருந்தமைக்குச் சான்று ஒன்று காட்டுக.



9. உடற்பயிற்சி பற்றிக் கூறும் அறநூலைச் சுட்டுக.  
10. புல்லரிசி என்பதென்ன?

பகுதி ஆ

(5 × 5 = 25)

அனைத்து வினாக்களுக்கும் விடை தருக.

11. (அ) மொழிக்குடும்பங்கள் பற்றி எடுத்துரைக்க.  
(அல்லது)  
(ஆ) செம்மொழிக்களைத் தகுதிகளை விரித்துரைக்க.
12. (அ) ஒற்றை ஆடை, இரட்டை ஆடை, என்பதென்ன? சான்றுடன் விளக்குக.  
(அல்லது)  
(ஆ) காலத்திற்கு ஏற்ற உடை என்பது குறித்து எடுத்துரைக்க.
13. (அ) சங்க இலக்கியங்கள் வழி அறியப்படும் அணிகலன்களுக்குச் சான்று காட்டி விரித்துரைக்க.  
(அல்லது)  
(ஆ) ஆண்கள் அணியும் அணிகலன்களாக இலக்கியங்கள் குறிப்பிடுவற்றைச் சான்றுடன் எடுத்துரைக்க.
14. (அ) ஒவியக்கலை பண்டைக்காலத்தில் சிறப்புற்றிருந்தமைக்கு இலக்கியச் சான்று காட்டுக.  
(அல்லது)  
(ஆ) சிலம்பில் மாதவி ஆடும் ஆடல்களை விரித்துரைக்க.
15. (அ) செம்மொழி இலக்கியங்களில் காணலாகும் அறிவியல் சிந்தனைகள் எடுத்துரைக்க.  
(அல்லது)  
(ஆ) இலக்கியங்கள்வழி அறியலாகும் நீர்மேலாண்மை குறித்து எடுத்துரைக்க.

பகுதி இ

(3 × 10 = 30)

அனைத்து வினாக்களுக்கும் விடை தருக.

16. (அ) தமிழன் தொன்மை குறித்துக் கட்டுரைக்க.

(அல்லது)

(ஆ) சங்க இலக்கியங்கள் செம்மொழித் தகுதி பெற்றிருப்பதனைச் சான்றுடன் நிறுவுக.

17. (அ) பண்பாட்டைப் போற்றுவதில் செம்மொழி இலக்கியங்கள் பெறும் இடம்குறித்துக் கட்டுரை வரைக.

(அல்லது)

(ஆ) இலக்கியங்களில் ஆடைகள் - கட்டுரை வரைக.

18. (அ) அணிகலன்கள் பற்றிய பழந்தமிழ் இலக்கியப் பதிவுகளைச் சான்றுடன் விளக்கி வரைக.

(அல்லது)

(ஆ) நடனக்கலை சிறப்புற்றிருந்தமைக்குச் சிலப்பதிகாரம் சான்றாதலை விளக்கியுரைக்க.

C-5670

Sub. Code

91411/12

Common for all U.G. B.Sc./B.B.A. DEGREE  
EXAMINATION, APRIL 2022

First Year/First Semester

English

Part II – ENGLISH PROSE AND COMMUNICATION  
SKILLS

(2016 to 2018 onwards)

Duration : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. What is vocational education?
2. What is it that Indira Gandhi does not demand?
3. What did Stevenson ride on?
4. What was the boy's reaction to the punishment?
5. What was remarkable about Ernest Thompson Seton's *Wild Animals I have Known*?
6. What are the tree visions that Sarojini Naidu talks of?
7. He \_\_\_\_\_ my uncle yesterday. (Use correct form of verb)
8. Define Noun.
9. Seenu is a boy \_\_\_\_\_ poor family. (use appropriate preposition)
10. \_\_\_\_\_ you like to have tea or coffee? (Use correct auxiliaries)

**Part B**

(5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Write a short note on how to attain Excellence I education emphasized by Livingstone.

Or

- (b) Substantiate Indira Gandhi's view that the youth are the backbone of India.

12. (a) What is the usefulness of forming habits?

Or

- (b) How does the teacher try to repair the damage done and with what result?

13. (a) What books did Margaret Atwood enjoy reading?

Or

- (b) What does Sarojini Naidu say about the vision of patriotism?

14. (a) Write a short note on types of sentences.

Or

- (b) Fill in the blanks using Present Perfect Continuous Tense:

- (i) The \_\_\_\_\_ (work) all day.  
(ii) He eyes were red because she \_\_\_\_\_ (cry).  
(iii) She \_\_\_\_\_ ( sing) upto that morning.  
(iv) They \_\_\_\_\_ (wait) for her since 8 0' clock.  
(v) Mani \_\_\_\_\_ (read) this book for the past three hours.

15. (a) Write the correct sentence pattern.
- (i) I finished the work.
  - (ii) She worked in a reputed company.
  - (iii) Our headmaster Sideline was a lending library.
  - (iv) They made David Chairman of the Rotary Club.
  - (v) We wish you happy new year.

Or

- (b) Fill in the blanks using appropriate Prepositions:
- (i) He came \_\_\_\_\_ the office \_\_\_\_\_ a big hurry.
  - (ii) We drove \_\_\_\_\_ the store.
  - (iii) Four armed men held \_\_\_\_\_ the bank.
  - (iv) We finally lived \_\_\_\_\_ that incident.

**Part C** (3 × 10 = 30)

Answer **all** questions.

16. (a) What, according to Livingstone, are the essentials of education?

Or

- (b) Write an essay on personality of Indira Gandhi as revealed in her speeches.

17. (a) What are Gardiner's views on the desirability or otherwise of forming habits?

Or

- (b) Write an essay in 500 words about the relationship between the rich student and the poor teacher.

18. (a) Write an essay on present tenses.

Or

(b) Fill in the blanks with correct preposition.

Nehru was called \_\_\_\_\_ to say a few words  
\_\_\_\_\_ the occasion \_\_\_\_\_ the  
assassination \_\_\_\_\_ Gandhi \_\_\_\_\_ an  
utter sense \_\_\_\_\_ shame, Nehru expressed  
his regret \_\_\_\_\_ the failure out country  
\_\_\_\_\_ give protection \_\_\_\_\_ the life  
\_\_\_\_\_ this great man, as well as that  
\_\_\_\_\_ many an innocent man, woman and  
child.

\_\_\_\_\_

**C-7021**

**Sub. Code**

**21F**

**B.Sc./B.B.A. DEGREE EXAMINATION, NOVEMBER 2022.**

**Second Year — Second Semester**

**Part I — FRENCH**

**(Common for All UG Degree Courses)**

**(2016 to 2018 onwards)**

Duration : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. Comment vas-tu?
2. Ça fait longtemps, comment vas-tu?
3. Comment t'appelles-tu?
4. Je m'appelle Peter. Comment t'appelles-tu?
5. Quel est ton numéro de téléphone?
6. J'aimerais t'appeler. Quel est ton numéro de téléphone ?
7. Quel âge as-tu?
8. Tu dois avoir 21 ans pour rentrer ici. Quel âge as-tu ?
9. D'où venez-vous?
10. Vous semblez être britannique. D'où venez-vous?

**Part B**

(5 × 5 = 25)

Answer **all** questions.

11. (a) énumérer 05 légumes en français.

Ou

- (b) Lister 05 fruits en français.

12. (a) Écrire la saison en français.

Ou

- (b) Écrire les instructions en français.

13. Écrire les noms de pays en français :

- (a) (i) India  
(ii) Japan  
(iii) China  
(iv) Italy  
(v) Rome.

Ou

- (b) (i) Denmark  
(ii) London  
(iii) Australia  
(iv) Europe  
(v) Sweden.

14. Écrire des nombres en français :

- (a) (i) 100  
(ii) 200  
(iii) 300  
(iv) 400  
(v) 500.

Ou



- (b) (i) 50
- (ii) 65
- (iii) 70
- (iv) 80
- (v) 90.

15. (a) Ecrire les membres de la famille en français.

Ou

(b) Ecrire les jours d'une semaine en français.

**Part C** (3 × 10 = 30)

Answer **all** questions.

16. (a) Ecrire des alphabets en français.

Ou

(b) Ecrire les mois de l'année en français.

17. (a) Ecrivez les nombres de 1 à 25 en français.

Ou

(b) Ecrivez les nombres de 25 à 50 en français.

18. (a) Présente-toi en français.

Ou

(b) Expliquez votre ville natale en français.

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C-7022

Sub. Code

21H

U.G. DEGREE EXAMINATION, NOVEMBER 2022

Second Year/Second Semester

Part I – Hindi – II

HINDI II — PROSE, GRAMMAR AND  
TRANSLATION – II

(Common for all U.G. Degree Courses)

(2016 to 2018 onwards)

Duration : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

सभी प्रश्नों के उत्तर संक्षेप में लिखिए।

1. वह कौन-सी वस्तु है जो विभिन्नता में एकता बनाये हुए है?
2. घृणा और भय में क्या सम्बन्ध है?
3. लेखक ने रजिया को अंतिम बार किस रूप में देखा?
4. 'मक्रील' कहानी की भाषा पर प्रकाश डालिए।
5. 'बहता पानी निर्मला' पाठ का निष्कर्ष क्या है?
6. गाँधीजी के प्रधान सिद्धांत क्या है?
7. यात्रा के कौन-कौन तरीके हैं? वे क्या है?
8. भारत के सम्बन्ध में गाँधीजी की कल्पना क्या थी?

9. चुड़िहारिन के पेशे में क्या विशेषतायें होनी चाहिए?
10. घृणा किस प्रकार की मनोवृत्ति है और यह किसके लिए सिरजी गयी है?

**Part B**

(5 × 5 = 25)

सभी प्रश्नों के उत्तर लिखिए।

संदर्भ सहित व्याख्या कीजिए।

11. (a) हमारी सामूहिक चेतना ऐसे नैतिक आधार पर ठहरी हुई है, जो पहाड़ों से भी मजबूत, समुद्रों से भी गहरी और आकाश से भी अधिक व्यापक है।

या

- (b) कौन नहीं जानता कि वही विष, जो प्राणों का नाश कर सकता है, प्राणों का संकट भी दूर कर सकता है।

12. (a) और गोरे चेहरे तो मिले हैं, किंतु इनकी आँखों में जो एक अजीब किस्म का नीलापन दिखा, वह कहाँ?

या

- (b) समीप खड़ी एक युवती को देख, भद्रता से टोपी छूते हुए उसने पूछा, 'आप भी इसी होटल में ठहरी हैं'।

13. (a) 'जनाब, अपना बोरिया-बिस्तर समेटिका और ज़रा चलते-फिरते नज़र आइये' यह आप का अपमान नहीं है।

या

- (b) वे झोपडियों में रहते, नंगे पैर चलते, एक धोती-भर पहनते।

व्याकरण

14. (a) अपूर्ण क्रिया से क्या मतलब है? उदाहरण दीजिए।

या

- (b) काल की दृष्टि से क्रिया के भेदों को उदाहरण सहित स्पष्ट कीजिए।

15. (a) 'ने' विधि का प्रयोग समझाइए।

या

(b) संभाव्य भविष्यत् काल किन अर्थों में प्रयुक्त होता है?

**Part C**

(3 × 10 = 30)

सभी प्रश्नों के उत्तर दीजिए। उत्तर विस्तार से हो।

16. (a) 'जीवन में घृणा का स्थान' पाठ का सारांश लिखिए।

या

(b) 'राष्ट्रपिता महात्मा गाँधी' पाठ का सारांश लिखिए।

17. (a) 'क्रिया विशेषण' किसे कहते हैं? अर्थ के अनुसार इसके कितने भेद हैं? उदाहरण सहित समझाइए।

या

(b) 'कारक' किसे कहते हैं? उनके भेदों को उदाहरण सहित समझाइए।

18. हिन्दी में अनुवाद कीजिए।

(a) Many people say that the climate of England and that of Kodaikanal are almost the same. You do not have as much heat at Kodaikanal, as you have at Ooty during the day-time. The temperature at night is also not so cold as at Ooty. The natural scenery of Kodaikanal is just like that of England. But on account of better travel facilities more people go to Ooty. Hence there is more calm at Kodaikanal than at Ooty.

या

- (b) Everyone has a right to have enough good food to eat, if he earns it by his work. Here the state has a great responsibility. It must try to find food for all the people, to be sold at prices which they can afford to pay. The Government should, therefore, try to improve food production by helping the farmers in many ways.
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C-7020

Sub. Code

21T

UG DEGREE EXAMINATION, NOVEMBER 2022

Second Year / Second Semester

Part I – இலக்கணமும் படைப்பிலக்கியமும்

Tamil

Common for all UG Degree Course

(2016 to 2018 onwards)

Duration: 3 Hours

Maximum : 75 Marks

பகுதி அ

(10 × 2 = 20)

அனைத்து வினாக்களுக்கு விடையளி.

1. முதலெழுத்துக்கள் என்பவை எவை?
2. மொழியிறுதி எழுத்துக்கள் யாவை?
3. புதுக்கவிதையின் இலக்கணம் பற்றி வரைக.
4. மீராவின் கவிதைத் திறன் குறித்துரைக்க.
5. தமிழ்ச் சிறுகதைத் தோற்றம் குறித்து எழுதுக.
6. அசோகமித்ரனின் சிறுகதைப் பாங்கு யாது?
7. 'வலைப்பூ' - விளக்குக.
8. கவிதையின் அமைப்பு பற்றி எழுதுக.
9. இணையமும் தமிழும் - குறிப்பு வரைக.
10. படைப்பில் – கற்பனை பெறும் இடம் யாது?

அனைத்து வினாக்களுக்கு விடையளி.

11. (அ) சார்பெழுத்துக்களின் வகைகளை விவரி.

(அல்லது)

(ஆ) வல்லினம் மிகா இடங்களைக் காட்டுக.

12. (அ) மு. மேத்தா வைகறை கவிதையில் உரைப்பனவற்றைத் தருக.

(அல்லது)

(ஆ) வைரமுத்துவின் கவிதைச் சிறப்பினைத் தருக.

13. (அ) சாபவிமோசனம் கதைக் கருவை விவரி.

(அல்லது)

(ஆ) பரிசு கதையில் காணப்படும் சமூக உணர்வுகளைத் தெளிவுபடுத்துக.

14. (அ) மின் நூலகம் குறிப்பு வரைக.

(அல்லது)

(ஆ) இணையமும் தமிழ் வளர்ச்சித் துறையும் பற்றி விளக்குக.

15. (அ) இன்றைய சிறுகதைகளின் நிலை யாது?

(அல்லது)

(ஆ) இணைய வளர்ச்சி குறித்து ஆய்க.

பகுதி இ

(3 × 10 = 30)

அனைத்து வினாக்களுக்கு விடையளி.

16. (அ) உடம்படுமெய் பற்றி விவரிக்க.

(அல்லது)

(ஆ) மொழிமுதல் எழுத்துக்களைச் சான்றுடன் விளக்குக.

17. (அ) சிறுகதை வளர்ச்சி குறித்து மதிப்படுக.

(அல்லது)

(ஆ) புதுக்கவிதையின் தோற்றமும் வளர்ச்சியும் பற்றி ஆய்க.

18. (அ) மின்னஞ்சல் என்பதனை விளக்குக.

(அல்லது)

(ஆ) 'மூத்தோர் சொல்' எனும் தலைப்பில் சிறுகதை படைக்க.

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**C-5674**

**Sub. Code**

**91421/22**

**B.Sc./B.B.A. DEGREE EXAMINATION, APRIL 2022**

**Second Year/Second Semester**

**Common for all UG Degree Courses**

**Part II – ENGLISH - PROSE, EXTENSIVE READING  
AND COMMUNICATION SKILLS**

**(2016 to 2018 onwards)**

Duration : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. Kalam is proud of having worked with three great men. Who are they?
2. What kind of society did we have in the pre-war period?
3. What are the two ways in which science benefits man?
4. Why does Nehru regard Gandhi as the sun?
5. What experiences do students in schools and colleges have in arguing?
6. What was the agreement between Bob and Jimmy twenty years before, when they parted?
7. How did the Quick man explain it away?

8. What did the stranger want to know?
9. What are the types of adjective clause?
10. What is Sub-ordinate Conjunctions? Give example.

**Part B** (5 × 5 = 25)

Answer **all** questions.

11. (a) What does Kalam say about the passivity of Indians?

Or

- (b) What are the contradictory views of Plato on the artist's role in society?

12. (a) How does Nehru reconcile himself with Gandhi's death?

Or

- (b) What is Lynd's conversion to socialism and nationalism?

13. (a) How does the true friendship reflect in *After Twenty Years*?

Or

- (b) How did the conjuror take his revenge on the Quick Man?

14. (a) How did the father test the skills of his sons?

Or

- (b) How do Phrase help in making of Simple sentence?

15. (a) Jot down the changes/ rules while transforming the Exclamatory sentences of Direct speech into Indirect speech.

Or

- (b) Write a paragraph on the 'Formation of Positive and Superlative Degrees'.

**Part C**

(3 × 10 = 30)

Answer **all** questions.

16. (a) Write an essay on Kalam's three visions.

Or

- (b) What does Holt say about ballet training? What does he deduce from it?

17. (a) How are the two friends contrasted?

Or

- (b) Elucidate how the conjuror's tricks and the Quick Man's deflationary comments for it.

18. (a) What are the kinds of Conjunctions? Explain in detail.

Or

- (b) What are the Degrees of comparison? Explain with examples.

**C-7024**

**Sub. Code**

**31**

**COMMON FOR ALL U.G. DEGREE COURSES  
EXAMINATION, NOVEMBER 2022**

**Third Semester/Third Year**

**Part II — ENGLISH**

**COMMUNICATIVE SKILLS**

**(2016 to 2018 onwards)**

Duration : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. What is meant by non-verbal communication?
2. How do you manage noise situation on your presentation?
3. Frame Question for the following sentences.
  - (a) I would like to become an investigating agent.
  - (b) He had worked here for the past ten years.
4. Define Homophones.
5. Give two example for wrong position of adverb.
6. What is the main use of interjections?
7. What are called consonants?
8. What is meant by rising intonation?
9. What are the benefits of skimming?
10. Mention any two mechanics of good handwriting.

**Part B**

(5 × 5 = 25)

Answer **all** questions.

11. (a) Write a paragraph on non-verbal communication.

Or

- (b) What are the ways of challenging the barriers of communication?

12. (a) Write a short note on homophones with examples.

Or

- (b) Change the following active sentences into passive voice.

(i) I did not beat her.

(ii) I will never forget this experience.

(iii) Mother made a cake yesterday.

(iv) The tiger was chasing the deer.

(v) She has written a novel.

13. (a) Write a note on wrong position of adverbs.

Or

- (b) Write in short on some confused use of adjectives.

14. (a) Write a note on primary stress with proper examples.

Or

- (b) Describe the general use of intonation.

15. (a) What are the uses of silent reading?

Or

(b) What is the role of SQ3R in communication?

**Part C** (3 × 10 = 30)

Answer **all** questions.

16. (a) Discuss in detail on effective ways of communication.

Or

(b) Write an essay on barriers to communication and effective ways to overcome the barriers.

17. (a) Write briefly on the following :

(i) Phrasal verbs

(ii) Conditional clause.

Or

(b) Write an essay on common confusions of parts of speech.

18. (a) Write an essay on the types of reading and developing reading strategies.

Or

(b) Explain briefly on mechanics of good handwriting.

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**C-7025**

**Sub. Code**

**41**

**U.G. DEGREE EXAMINATION, NOVEMBER 2022**

**Fourth Semester**

**Part II — English**

**EMPLOYABILITY SKILLS**

**(Common for all UG Degree Courses)**

**(2016 to 2018 onwards)**

Duration : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** following questions.

1. How do you introduce a person in a public meeting?
2. What is meant by head to foot appearance?
3. Why do we write letters?
4. What are the basic elements for writing job application?
5. What are the different types of greetings?
6. Define portfolio.
7. What is meant by oral composition?
8. What are the three main parts of a composition?
9. Define kinesics.
10. What are the technical elements for using video aids for communication?

**Part B**

(5 × 5 = 25)

Answer **all** questions.

11. (a) Write in short on telephonic etiquettes.

Or

- (b) Describe in short on head to foot appearance.

12. (a) What are the important aspects on resume writing?

Or

- (b) Write a letter to the editor about your street road's poor condition.

13. (a) Write in short on merits of e-mail.

Or

- (b) Write in short on developing topic sentences into paragraph.

14. (a) Write briefly on written composition.

Or

- (b) Write a paragraph on 'e-waste'.

15. (a) Write in short on gesture.

Or

- (b) Describe in short on the uses of visual aids.



**Part C**

(3 × 10 = 30)

Answer **all** questions.

16. (a) Write an essay on interview techniques and head to foot appearance while attending interview.

Or

- (b) Write a letter to the manager for the post of sales officer along with your resume.

17. (a) Write an essay on preparing portfolios and its various types.

Or

- (b) Write a review for two books that you recently read.

18. (a) Read the passage below and then answer the following questions.

One day, my father talked to his phone for a long time his airtime got used up before he could end his talk. He was conversing with his workmate, Mr. Obadiya. He decided to send me to buy more airtime.

Using My bicycle, I rode as fast as a horse. I returned within ten minutes with airtime. When I reached home, I found my father busy listening to the news on radio. He was so attentive that he did not want any disturbance. He therefore, gave me the mobile phone to load the airtime for him.

I was excited because I was going to do so for the first time. I got the airtime card and scratched it. Since I did not know what to do after scratching, I opened the phone. Then I took it to my father thinking I had done the right thing.

My father immediately tried to call his friend. He dialed repeatedly but the call could not go through. "Have you loaded the airtime"? he asked me. I responded happily that I had loaded it. As he removed the battery, the airtime card dropped on the floor. "Oh my son! you did not know how to load airtime !" he laughed. I was disappointed that I did not load airtime for my father. He realized that I was sad. He held me in his arms and said, "don't worry my son. Let's do it together". Then he loaded as I was watching. I was very happy to learn how to load airtime.

Questions for composition :

- (i) What happened to the airtime of the father?
- (ii) Why did the writer go to the shop?
- (iii) When the writer brought airtime, what was his father doing?
- (iv) Why was the writer excited?
- (v) Why did the writer get disappointed?

Or

- (b) Write an essay on different types of visual aids.

**C- 7019**

**Sub. Code**

**91411/12**

**U.G. DEGREE EXAMINATION, NOVEMBER 2022**

**First Year / First Semester**

**Part II — English**

**PROSE AND COMMUNICATION SKILLS**

**(Common for All U.G. Degree Courses)**

**(2016 to 2018 onwards)**

Duration : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. Who is compared to the man who stumbles through his lessons?
2. What are the leadership quality according to Indira Gandhi?
3. Life is a —————
4. What is the main theme of the story “Crime and Punishment”?
5. Name the book which is about recipes as mentioned by Atwood?
6. What is the duty of each community in the view point of Sarojini Naidu?
7. Define Simple Present Tense.

8. Fill in the blanks with correct adjectives :

(a) Elephant is the ——— animal.

(b) She is a ——— lady.

9. Define definite article.

10. Fill in the blanks using correct modals :

(a) ——— I go?

(b) He ——— follow the rules.

**Part B**

(5 × 5 = 25)

Answer **all** questions.

11. (a) Write a short note on quality education leads to attain excellence.

Or

(b) Why does Indira Gandhi insist that youth are the backbone of India?

12. (a) Why was Balfour organized when he had to make a speech?

Or

(b) Describe the relationship between the student and the teacher.

13. (a) Why did Atwood prefer animal stories?

Or

(b) What does Sarojini Naidu say about the vision of patriotism?

14. (a) Explain the uses of simple past and past continuous Tense with examples.

Or

(b) What is Noun? What are the types of Nouns? Explain.

15. (a) Identify the pattern of the following sentences :

- (i) I was working in my father's company.
- (ii) Quality education is a must one.
- (iii) He bought many books about the country.
- (iv) The men have worked for five hours.
- (v) I will meet you there in a moment.

Or

(b) Fill in the blanks with the correct article :

- (i) I saw ——— tiger.
- (ii) This is ——— purse she presented me.
- (iii) The function was quite ——— success.
- (iv) ——— family sits for lunch.
- (v) This car runs at sixty kilometers ——— hour.

**Part C**

(3 × 10 = 30)

Answer **all** questions.

16. (a) What are Livingstone's views on education?

Or

(b) Write an essay on "On the Power of Youth".

17. (a) What are Gardiner's views on desirability or otherwise of forming habits?

Or

(b) What is the moral of the story "Crime and punishment? Elucidate.

18. (a) Fill in the blanks with correct adverbs from the box:  
(usually, never, once, always, often, mostly, very, sometimes, occasionally, rarely)
- (i) I \_\_\_\_\_ go to bed at 10 O' clock.
  - (ii) I have \_\_\_\_\_ been to the USA.
  - (iii) I have been to Australia Just \_\_\_\_\_
  - (iv) I \_\_\_\_\_ take a bath before I go to bed.
  - (v) My grand-parents live in Kerala. I visit them \_\_\_\_\_
  - (vi) My friends are \_\_\_\_\_ non-smokers.
  - (vii) I was \_\_\_\_\_ impressed with her.
  - (viii) I \_\_\_\_\_ go for a walk in the park.
  - (ix) I watch English films \_\_\_\_\_
  - (x) They \_\_\_\_\_ go out.

Or

- (b) Fill in the blanks with appropriate prepositions :
- (i) The old man sat \_\_\_\_\_ the chair.
  - (ii) He jumped \_\_\_\_\_ the wall.
  - (iii) He has been singing here \_\_\_\_\_ 8 O' clock.
  - (iv) He earned more \_\_\_\_\_ his sister.
  - (v) He ran \_\_\_\_\_ the room.
  - (vi) He is walking \_\_\_\_\_ the road.
  - (vii) The pries knelt \_\_\_\_\_ the altar as the bride stood by him.
  - (viii) \_\_\_\_\_ sweets the corporation building there is a hotel.
  - (ix) He spoke \_\_\_\_\_ the independence of India.
  - (x) The wholesaler gives commission \_\_\_\_\_ 25%.

**C-7076**

**Sub. Code**

**11613**

**B.Sc. DEGREE EXAMINATION, NOVEMBER 2022.**

**First Semester**

**Nautical Science**

**NAUTICAL MATHEMATICS – I**

**(2016 onwards)**

Duration : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. Prove that  $(\vec{a} + \vec{b}) \times (\vec{a} - \vec{b}) = 2(\vec{b} \times \vec{a})$
2. Define event and sample space.
3. What is the volume of a cone?
4. Find the equation of the tangent to the parabola  $y^2 - 12x$  at  $(3, -6)$ .
5. Define Great circle and Small circle.
6. State the properties of Spherical triangle.
7. Find the derivative of  $y = 3 \sin x - e^x$ .
8. Integrate  $\sqrt{1 + \sin 2x}$
9. Define rank of matrix.
10. If  $A = \begin{bmatrix} 5 & 4 \\ 3 & -2 \end{bmatrix}$  and  $B = \begin{bmatrix} 3 & 2 \\ 4 & 5 \end{bmatrix}$ , find  $A + B$ .

**Part B**

(5 × 5 = 25)

Answer **all** questions.

11. (a) What is the chance that a leap year selected at random will contain 53 Sundays?

Or

- (b) Find the mean and standard deviation of the following.  
9,27,18,54,45,72,36,63,81

12. (a) At which point on the curve  $y = x^2 - 12x + 18$  is the tangent parallel to the x-axis?

Or

- (b) Find the eccentricity, foci, length of the latus rectum of the ellipse

$$3x^2 + 4y^2 - 12x - 8y + 4 = 0.$$

13. (a) The sides of a spherical triangle are all quadrants and  $x, y, z$  are the arcs joining any point within the triangle to the angular points. Prove that  $\cos^2 x + \cos^2 y + \cos^2 z = 1$ .

Or

- (b) In a spherical triangle ABC,

$$\text{prove that } \tan \frac{1}{2}(A + B) = \frac{\sin \frac{1}{2}(a - b)}{\sin \frac{1}{2}(a + b)} \cot \frac{c}{2}.$$

14. (a) If  $x = a(\cos t + t \sin t), y = a(\sin t - t \cos t)$ , find  $\frac{d^2y}{dx^2}$ .

Or

- (b) Integrate  $\int (\log x)^2 dx$ .



15. (a) Show that the vectors  $X_1 = (2, -2, 1)$ ,  $X_2(1, 4, -1)$  and  $X_3 = (4, 6, -3)$  are linearly independent.

Or

- (b) Show that the system of equations are inconsistent  
 $x + y + z = 1$ ,  $2x - 2y + 3z = 1$ ,  $x - y + 2z = 5$ ,  
 $3x + y + z = 2$

**Part C**

(3 × 10 = 30)

Answer **all** questions.

16. (a) Calculate the Pearson's coefficient of correlation from the following

Data using 44 and 26 respectively as the origin of  $x$  and  $y$ .

$x$  43 44 46 40 44 42 45 42 38 40 42 57

$y$  29 31 19 18 19 27 27 29 41 30 26 10

Or

- (b) Find the volume of sphere of radius  $a$ .

17. (a) Given  $A = 63^\circ 20'$ ,  $B = 135^\circ 34'$ ,  $C = 90^\circ$ , solve the triangle.

Or

- (b) Evaluate  $\int_0^{\frac{\pi}{2}} \log \sin x \, dx$

18. (a) Find the eigen values and eigen vectors of

$$\begin{bmatrix} 8 & -6 & 2 \\ -6 & 7 & -4 \\ 2 & -4 & 3 \end{bmatrix}$$

Or

- (b) Find the rank of  $\begin{bmatrix} 1 & 2 & 1 & 2 \\ 1 & 3 & 2 & 2 \\ 2 & 4 & 3 & 4 \\ 3 & 7 & 4 & 6 \end{bmatrix}$ .

**C-7077**

**Sub. Code**

**11614**

**B.Sc. DEGREE EXAMINATION, NOVEMBER 2022**

**First Semester**

**Nautical Science**

**NAUTICAL PHYSICS AND ELECTRONICS - I**

**(2016 onwards)**

Duration: 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. Define Centre of Gravity.
2. What is projectile?
3. Describe Lami's theorem.
4. State the advantages of Torid.
5. Bourdon's pressure gauge is used for what?
6. Describe Stoke's law.
7. What for Plimsoll marks are provided on board ship?
8. State the functions of Photometers.
9. What are the purposes of Azimuth mirror?
10. Describe TACAN.

**Part B**

(5 × 5 = 25)

Answer **all** questions.

11. (a) Explain the terms Surface tension and Capillary.

Or

- (b) Describe the Newton's experimental law of mechanics.

12. (a) What are batteries and explain their characteristics?

Or

- (b) Explain about the Magnetic elements of earth.

13. (a) Define Bernoulli's equation and its application.

Or

- (b) Explain the streamline flow and turbulent flow in detail.

14. (a) Differentiate between N-type and P-type semiconductors.

Or

- (b) What is Thermistor? Discuss its characters and application.

15. (a) Explain the term Photometers and photovoltaic cell.

Or

- (b) State the limitations of Radar.

**Part C**

(3 × 10 = 30)

Answer **all** questions.

16. (a) Discuss about planetary motion and Kepler's law.

Or

- (b) State and explain Newton's experimental law.

17. (a) Explain the different types of rectifiers with neat diagrams.

Or

- (b) With neat diagram explain the working principle of Sextant.

18. (a) Explain the construction and characteristics of Transistors.

Or

- (b) Explain in detail about Weston differential pulley and Hydrograph.

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**C-7078**

**Sub. Code**

**11615**

**B.Sc. DEGREE EXAMINATION, NOVEMBER 2022**

**First Semester**

**Nautical Science**

**NAVAL ARCHITECTURE - I**

**(2016 onwards)**

Duration: 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. Why are the Bulbous bow provided for merchant ships?
2. What is trim?
3. State Reserve Buoyancy.
4. Describe Free board.
5. What do understand by the term Rise of floor?
6. Enumerate the Gases used for Gas welding.
7. What is the influence of Centre of flotation on stability of ship?
8. Define Block coefficient.
9. What is the effect of change of density of water on ships draught?
10. State Archimedes principle.

**Part B**

(5 × 5 = 25)

Answer **all** questions.

11. (a) Specify the special arrangements made for Tanker ship in double bottom with neat diagram.

Or

- (b) What are IMO Numbers? Where are these numbers marked on board ship?

12. (a) Draw the Double bottom arrangement of General cargo ship.

Or

- (b) What are Reefer ships? Give few examples.

13. (a) A vessel's Block coefficient is 0.8, Mid-ship coefficient is 0.85. Calculate Prismatic co-efficient.

Or

- (b) What is centre of buoyancy? State the factors affecting the centre of buoyancy.

14. (a) A ship of 7800 t with even keel draught of 6.5 m is moving from sea water to river water. Calculate the new draught.

Or

- (b) Write notes on Fresh water allowance and Dock water allowance.

15. (a) What is the effect of moving masses on Forward upper decks over ship's centre of gravity.

Or

- (b) State the effects of slack tanks on stability of ship.

**Part C**

(3 × 10 = 30)

Answer **all** questions.

16. (a) A ship of 12000 t displacement has  $KG = 6.3\text{m}$ ,  $KB = 3.5\text{m}$ ,  $KM = 7.1\text{m}$ . Find moment of statical stability when she heels to  $9^\circ$ , assuming that she is wall sided.

Or

- (b) Write short notes on:
- (i) Flare
  - (ii) Sheer
  - (iii) TPC
  - (iv) Righting lever
  - (v) List
17. (a) Draw and mention a longitudinally framed double bottom construction arrangements showing solid and bracket floors.

Or

- (b) Explain the three stability conditions of ship.
18. (a) What would be the effect of partially filled tanks on board ship? How can you reduce this effect?

Or

- (b) A ship of  $125\text{m} \times 15\text{m} \times 10\text{m}$  has the Block coefficient of 0.8 and floating at summer load draught of 7.5m in SW. Find how much cargo has to be removed to remain at the same draught in salt water.

**C-7079**

**Sub. Code**

**11616**

**B.Sc. DEGREE EXAMINATION, NOVEMBER 2022**

**First Semester**

**Nautical Science**

**SHIP OPERATION TECHNOLOGY - I**

**(2016 onwards)**

Duration: 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** the questions.

1. Mention any four shipboard operations.
2. How does a ship float?
3. Mention any eight types of ships.
4. What are the uses of life boat Davits?
5. Draw a fire triangle.
6. Why are there Life boats and Rescue boat on-board a ship?
7. What is a Distress?
8. Mention different types of natural fibre roads.
9. State two advantages of spray painting.
10. Differentiate Bend from a Knot.



**Part B**

(5 × 5 = 25)

Answer **all** the questions.

11. (a) With the help of a diagram explain the function of each rope holding a ship alongside a Warf.

Or

- (b) What is the watch-keeping arrangement at sea and in harbour.

12. (a) With the help of a diagram indicate the draft markings and load lines. Write short notes on each.

Or

- (b) What is the boot topping area and how is it different from other areas. (Make a diagram).

13. (a) Draw a sketch of wheel house and indicate important navigation items.

Or

- (b) Where are wire ropes used on board a ship?

14. (a) Explain different types of fixed fire-fighting systems available on board.

Or

- (b) Explain different types of portable fire-fighting systems available on board.

15. (a) Define Draft, Freeboard and Airdraft.

Or

- (b) What do you mean by watch-keeping?

**Part C**

(3 × 10 = 30)

Answer **all** questions.

16. (a) What do you mean by an emergency on-board and mention any 6 emergencies that may occur?

Or

- (b) How will you take over and maintain a sea-watch?

17. (a) Distinguish between paint defect and painting defect. Mention any five painting defects.

Or

- (b) How is the underwater part of the ship protected from corrosion?

18. (a) Draw an outline sketch of a ship and mark 20 parts.

Or

- (b) How to prepare a ship for leaving / entering harbour?

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**C-7023**

**Sub. Code**

**91421/22**

**U.G. DEGREE EXAMINATION, NOVEMBER 2022.**

**Second Year – Second Semester**

**Part II – English**

**PROSE, EXTENSIVE READING AND COMMUNICATION  
SKILLS**

**(Common for all UG Degree Courses)**

**(2016 onwards to 2018 onwards)**

Duration : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. What is Forster's attitude towards Mr. Rumble?
2. How long did it take to make orthosis 300 gm callipers?
3. When did Indians first have the vision of freedom?
4. How did Gandhi become enshrined?
5. How was Lynd converted to nationalism?
6. What is discipline of reality?
7. What is the function of an adverb?
8. Give two example of pronouns.
9. Give two examples of demonstrative pronouns
10. What are three types of conjunctions?

**Part B**

(5 × 5 = 25)

Answer **all** questions.

11. (a) Write brief note on Dr. Kalam's third vision.

Or

- (b) What are the two ways in which science benefits man?

12. (a) How does Nehru close his speech?

Or

- (b) What is discipline of reality? How does a child learn realities?

13. (a) Comment on the theme of *After Twenty Years*.

Or

- (b) Write the note on the character sketch of the astrologer.

14. (a) Fill in the blanks by adding adverbial clauses.

(i) You will win his favour \_\_\_\_\_.

(ii) \_\_\_\_\_ he is strong.

(iii) This is good \_\_\_\_\_.

(iv) \_\_\_\_\_ we must try.

(v) We eat \_\_\_\_\_.

Or

- (b) Define types of pronouns with examples.

15. (a) Change into Direct speech:
- (i) Shivani asked me how I could lift it.
  - (ii) Leela ordered her servant not to clean it.
  - (iii) He said that Kevin should come.
  - (iv) She said that rain had fallen last night.
  - (v) He asked me where I lived.

Or

- (b) Write a short note on three types of comparisons.

**Part C** (3 × 10 = 30)

Answer **all** questions.

16. (a) Write an essay on the conflict between the state and the artist.

Or

- (b) Write about Dr. Kalam's contribution to Indian education.

17. (a) Sum up Plato's contradictory views on the artist's role in society.

Or

- (b) How does Nehru react to Gandhi's death? How does he finally reconcile himself to it?

18. (a) Explain Pronoun and its kinds with example.

Or

- (b) Write short notes on adverbial clauses and its types with examples.

**C-7080**

**Sub. Code**

**11623**

**B.Sc. DEGREE EXAMINATION, NOVEMBER 2022**

**Second Semester**

**Nautical Science**

**NAUTICAL MATHEMATICS -II**

**(2016 onwards)**

Duration : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. What is the real part of a complex exponential.
2. What is geometric representation of complex numbers.
3. What numerical differentiation?
4. Which rule is a method for numerical integration.
5. How many types of vector integration are there?
6. Which types of operation is used in stokes theorem?
7. What is the vector form of Green's theorem?
8. How do you know if an equation is variable separable.
9. What is second order differential equation with constant coefficient.
10. Why harmonic oscillator is important?

**Part B**

(5 × 5 = 25)

Answer **all** questions.

11. (a) In an Argand diagram, Show that  $9 + i$ ,  $4 + 13i$ ,  $-8 + 8i$  and  $-3 - 4i$  form a square.

Or

- (b) Expand  $\cos^8 \theta$  in a series of cosines of multiples of  $\theta$
12. (a) The population of a certain town is shown in the following table.

Year	1931	1941	1951	1961	1971
Population	40.6	60.8	79.9	103.6	132.7

(in thousands)

Find the rate of growth of the population in the year 1961

Or

- (b) When a train is moving at 30 metres per second steam is shut off and brakes are applied. The speed of the train (V) in metres per second after t seconds is given by

T	0	5	10	15	20	25	30	35	40
V	30	24	19.5	16	13.6	11.7	10.0	8.5	7.0

using Simpson's rule determine the distance moved by the train in 40 secs.

13. (a) Find the work done in moving a particle in a force field  $\vec{F} = 3x^2\vec{i} + (2xz - y)\vec{j} + z\vec{k}$  along the straight line from (0,0,0) to (2,1,3)

Or

- (b) If  $\vec{F} = 3xy\vec{i} - y^3\vec{j}$ , compute  $\int_c \vec{F} \cdot d\vec{r}$  along  $y = 2x^2$  from (0,0) to (1,2).

14. (a) Solve  $(a^2 - 2xy - y^2) dx - (x + y)^2 dy = 0$ .

Or

- (b) Solve  $(3y + 2x + 4) dx - (4x + 6y + 5)dy = 0$ .

15. (a) Find the particular integral of  $(D^2 - 2D + 4)y = e^x \cos x$

Or

- (b) Solve  $\frac{d^2y}{dx^2} + 2y = x^2e^{3x} + e^x \cos 2x$ .

**Part C**

(3 × 10 = 30)

Answer **all** questions.

16. (a) Sum the series  $\sin^2 \theta + \frac{1}{2} \sin^2 \theta + \frac{1}{2} \sin 3\theta$   
 $\sin^3 \theta - \frac{1}{4} \sin 4\theta \sin^4 \theta + \dots \infty$

Or



(b) Evaluate  $\int_0^6 \frac{dx}{1+x^2}$  by using

- (i) Trapezoidal rule
- (ii) Simpson's  $\frac{1}{3}$  rule
- (iii) Waddle's rule

and compare the result with its actual value.

17. (a) Verify Green's theorem for  $\int (x - 2y)dx + x dy$ , where C is the circle  $x^2 + y^2 = 1$

Or

(b) Verify Stoke's theorem for  $\vec{F} = (2x - y)\vec{i} - yz^2\vec{j} - y^2z\vec{k}$ , where S is the upper half of the sphere  $x^2 + y^2 + z^2 = 1$  and C is its boundary.

18. (a) Solve  $y''+y = \sin x$ .

Or

(b) A body weighing 10 kg is hung from a spring. A pull of 20kg wt. will stretch the spring to 10cm the body is pulled down to 20cm below the static equilibrium position and then released. Find the displacement of the body from its equilibrium position at time t sec, the maximum velocity and the period of oscillation.

**C-7081**

**Sub. Code**

**11624**

**B.Sc. DEGREE EXAMINATION, NOVEMBER 2022**

**Second Semester**

**Nautical Science**

**NAUTICAL PHYSICS AND ELECTRONICS — II**

**(2016 onwards)**

Duration : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. What are Nuclear Reactors?
2. Define electro static charging.
3. What is electrical resonance?
4. What do you understand by the term Critical frequency?
5. What are Binary systems?
6. Define OR Gate.
7. What do you understand by the term Full Adder?
8. Express the term Power gain.
9. State the function of Ship's Antenna.
10. Why do we use Super heterodyne receivers on board ship?

**Part B**

(5 × 5 = 25)

Answer **all** questions.

11. (a) Describe uses of Nuclear energy on board ship with neat diagram.

Or

- (b) Explain the LCR circuits in series with a neat diagram.

12. (a) Write short notes on the influence of Satellite on weather forecast.

Or

- (b) List down the causes of formation of charges in an Oil tanker.

13. (a) Explain Binary addition and binary subtraction.

Or

- (b) Define De Morgan's theorem.

14. (a) Distinguish between AM and FM modulation.

Or

- (b) With neat diagram explain the Transmitter used as amplifier in CE mode.

15. (a) Explain the basic transmitter and their functions.

Or

- (b) Enumerate the ship borne Electronics navigational Aids.

**Part C**

(3 × 10 = 30)

Answer **all** questions.

16. (a) What is Nuclear waste hazards? Explain how will you detect them and enlist the safety measures are to initiated for nuclear hazards.

Or

- (b) State the uses, characteristics, care and maintenance of Nuclear reactor.
17. (a) With an aid of neat diagrams explain EM Resonance and EM Waves.

Or

- (b) Explain the working of RS Flip Flop and JK Flip Flop.
18. (a) Write short notes on basic concepts of CW and MCW and their advantages and disadvantages.

Or

- (b) Explain the Switching circuits, their characteristics and operation.
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**C-7082**

**Sub. Code**

**11625**

**B.Sc. DEGREE EXAMINATION, NOVEMBER 2022**

**Second Semester**

**Nautical Science**

**SHIP OPERATION TECHNOLOGY – II**

**(2016 onwards)**

Duration: 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer all the questions.

1. Why is the kanter shackle used on anchor chain?
2. Why should the spurling pipe be sealed?
3. What do you mean by abandoned ship?
4. What is the use of swivel piece?
5. Define SWP.
6. How to take care of gangway?
7. State different classes of fire.
8. What is the use of international shore coupling?
9. What is manouevering?
10. What do you mean by “Anchor Dragging”?

**Part B**

(5 × 5 = 25)

Answer **all** the questions.

11. (a) How to secure anchor for sea?  
Or  
(b) How to prepare anchor for letting go?
12. (a) Prepare a muster list for a total crew of 20 personnel.  
Or  
(b) How to launch a life boat?
13. (a) How to manually launch a life raft?  
Or  
(b) Explain the function of EPIRB.
14. (a) How and why do you mark the anchor cable?  
Or  
(b) Enumerate the precautions to be taken while working aloft.
15. (a) How to test hatch covers for water tightness?  
Or  
(b) How to keep an anchor watch?

**Part C**

(3 × 10 = 30)

Answer **all** the questions.

16. (a) Explain the CO<sub>2</sub> fixed fire fighting system.  
Or  
(b) What is the use of LSA / FFA plans?

17. (a) What different measures are available onboard for fire prevention?

Or

(b) With a diagram, explain manoeuvring data of a ship.

18. (a) Enumerate the sequence of action to be taken when a man falls overboard.

Or

(b) Imagine you are on foxle deck while anchoring. Explain different anchoring terms with their meaning.

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**C-7083**

**Sub. Code**

**11626**

**B.Sc. DEGREE EXAMINATION, NOVEMBER 2022.**

**Second Semester**

**Nautical Science**

**NAVIGATION – I**

**(2016 onwards)**

Duration : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. Define shape of the earth.
2. What is Great circle?
3. Describe Rhumb line.
4. What is International date line?
5. How will you express the speed of ship?
6. What is Zonal time?
7. Express GMT.
8. Why do ships are provided with two compasses?
9. What is trim?
10. What is Azimuth mirror?



**Part B**

(5 × 5 = 25)

Answer **all** questions.

11. (a) Define parallel of latitude.

Or

- (b) Explain Mercator sailing with diagrams.

12. (a) How will you determine the location of a ship at sea?

Or

- (b) Find the deviation and fill in the table

	1	2	3
Brg (C)	185°(C)	145°(C)	280°(C)
Brg (M)	180°(C)	148°(C)	282°(C)
Dev.	----	----	----

13. (a) Find Relative bearing from the following:

	1	2
T.Brg	: 285°	35°
T.Course	: 210°	102°
R.Brg	: ----	----

Or

- (b) Explain True course and Quadrantal course.

14. (a) Explain the Dead Reckoning position in detail.

Or

- (b) What do you understand by the term refraction?

15. (a) Find the position arrived after sailing  $260^\circ(T)$  for 1120 mile from a starting position P  $00^\circ 06'S$   $155^\circ 12'W$ .

Or

- (b) Discuss the parallel sailing.

**Part C**

(3 × 10 = 30)

Answer **all** questions.

16. (a) (i) What are Stellar magnitudes? (3)  
(ii) Define Bode's law. (3)  
(iii) Discuss axial and orbital revolutions of planets. (4)

Or

- (b) Find the course and distance of using parallel sailing

From A  $30^\circ 45'N$   $142^\circ 15'E$

To B  $36^\circ 10'N$   $145^\circ 12'E$

17. (a) Find the Rhumb line course and distance from starting position P:  $15^\circ 08'N$   $168^\circ 25'W$  to arrived position Q:  $04^\circ 06'S$   $185^\circ 10'W$

Or

- (b) Find the course and distance of using Traverse Table

From A  $40^\circ 35'N$   $175^\circ 25'W$

To B  $46^\circ 16'N$   $180^\circ 35'E$

18. (a) Day's work: On 4th May a ship in position  $55^{\circ} 24'S$   $152^{\circ} 23'E$  steamed as follows:

	True	Co (c)	Dev.	L'way	Wind	Speed kn
4 <sup>th</sup>	0800	$160^{\circ}$	$5^{\circ}E$	$4^{\circ}$	SWXW	8
	1200	$150^{\circ}$	$4^{\circ}E$	6	SWXW	8
	1600	$130^{\circ}$	$3^{\circ}E$	NIL	SW	7
	2000	$130^{\circ}$	$3^{\circ}E$	NIL	SW	7.5
	2400	$110^{\circ}$	$4^{\circ}E$	NIL	S	8
	0400	$105^{\circ}$	NIL	NIL	S	8
5 <sup>th</sup>	0800	$105^{\circ}$	NIL	NIL	S	8

Variation  $10^{\circ}E$  throughout. Find the DR position at morning 0800 Hours on 5<sup>th</sup> May and if the observed position, then was  $46^{\circ} 15'S$   $179^{\circ} 25'E$ . Find the set and drift of current.

Or

- (b) With a neat diagram explain the working principle of Marine Sextant.

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**C-7084**

**Sub. Code**

**11632**

**B.Sc. DEGREE EXAMINATION, NOVEMBER 2022**

**Third Semester**

**Nautical Science**

**CARGO HANDLING AND STOWAGE — I**

**(2016 onwards)**

Duration : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. What are offshore supply vessels? State their functions.
2. Define Bale Capacity.
3. Name parts of a container.
4. What do you understand by Load density?
5. What is dew point?
6. Define Ullage.
7. What is SWL?
8. What is the use of brine traps?
9. What is deadweight?
10. What is broken storage?

**Part B**

(5 × 5 = 25)

Answer **all** questions.

11. (a) State the difference between Ship sweat and Cargo sweat. What are the factors that affect sweat?

Or

- (b) Write a short note on identification of a container.

12. (a) Write a short note on Marking and labelling of dangerous cargoes.

Or

- (b) Define the terms

(i) TEU

(ii) Stack

(iii) Cell Guide

(iv) Bay

(v) Row

13. (a) What are the preparations to be done before loading refrigerated cargo?

Or

- (b) State the dunnaging requirements for refrigerated cargo.

14. (a) What operational checks are to be done on ship's cargo gear before cargo operations?

Or

- (b) Explain working of a ship's crane: hoisting, lowering and securing.

15. (a) How cargo holds are ventilated? Explain two types of ventilation systems.

Or

- (b) What is Cargo stowage plan and Pre-Stowage plan?

**Part C** (3 × 10 = 30)

Answer **all** questions.

16. (a) What are the precautions required prior, during and after loading of coal?

Or

- (b) Briefly explain Loadline of ships with a diagram.

17. (a) Write about the Union Purchase system. State its advantages and disadvantages.

Or

- (b) Briefly explain the hazards of bulk cargoes.

18. (a) State the duties of the officer on cargo watch.

Or

- (b) What are the entries to be made in the port log book during cargo operations?

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**C-7085**

**Sub. Code**

**11633**

**B.Sc. DEGREE EXAMINATION, NOVEMBER 2022**

**Third Semester**

**Nautical Science**

**MARINE ENGINEERING AND CONTROL SYSTEM — I**

**(2016 onwards)**

Duration : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. Mention any two methods of heat treatment of steel.
2. What is the effect on carbon steel?
3. Mention the fresh water making systems from sea water.
4. What is the purpose Gauge glass mounted on Boiler?
5. Which gas is used as refrigerant for domestic purpose?
6. Define dehumidifier.
7. Define emergency steering.
8. Mention any two types of Rudders.
9. What are prime movers?
10. What is intrinsically safe electrical equipment?

**Part B**

(5 × 5 = 25)

Answer **all** questions.

11. (a) List safety devices in two stage reciprocating air compressor and in the air receiver/Bottle.

Or

- (b) What is hydrophore system? Describe with neat diagram.

12. (a) Discuss the role of carbon in steel.

Or

- (b) What is NPSH in Centrifugal pumps?

13. (a) Enlist safety precautions to be observed while starting Marine Boiler.

Or

- (b) Describe the Natural and Forced ventilation system.

14. (a) State Boyle's and Charles' Law of gases.

Or

- (b) Label the component of a four-stroke diesel engine with neat diagram.

15. (a) Describe the synchronizing of generators with neat diagram.

Or

- (b) What is the effect of overload? What are the actions are to be initiated on occasions?



**Part C**

(3 × 10 = 30)

Answer **all** questions.

16. (a) With neat diagrams distinguish between Centrifugal pump and centrifugal pump.

Or

- (b) Explain the fresh water generation system on board ship with a neat sketch.

17. (a) With the aid of neat sketch explain the cold storage system on board ship.

Or

- (b) Explain the Electric power generation and distribution in ships.

18. (a) Sketch evaporator type of fresh water generation and label all the parts.

Or

- (b) Distinguish the difference between Two-stroke and Four-stroke engine with neat diagram.

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**C-7086**

**Sub. Code**

**11634**

**B.Sc. DEGREE EXAMINATION, NOVEMBER 2022**

**Third Semester**

**Nautical Science**

**VOYAGE PLANNING AND COLLISION  
PREVENTION — I**

**(2016 onwards)**

Duration : 3 Hours

Maximum : 75 Marks

Notes: (1) Draw diagram where ever applicable.

(2) Use of 1992 Tide tables are allowed.

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. What do you understand by “Number of a Chart”.
2. What are the classifications of Charts?
3. Briefly explain “Depth contour” with a diagram.
4. What are “Leading Lights”.
5. Given: Compass Course: 045<sup>o</sup> Find the Deviation and the Compass Error if the Variation is 5<sup>o</sup> W and True Course 030(T).
6. What is Leeway?
7. What is observed Position?
8. Define the term “V/L Not under command”.

9. How will you cross a TSS?
10. What is the meaning of “Head on Situation”

**Part B**

(5 × 5 = 25)

Answer **all** questions.

11. (a) Draw the following chart symbols:
- (i) Non dangerous wreck
  - (ii) Flood tide stream with rate of 2 kts
  - (iii) Eddies
  - (iv) Wind mill
  - (v) Racon A.

Or

- (b) Draw the following chart symbols:
- (i) Rock awash at Chart datum
  - (ii) Oil and gas pipe line
  - (iii) Pilot boarding ground
  - (iv) Designated Anchoring
  - (v) Fishing prohibited

12. (a) Write shortly about the following:

(i) Natural Scale

(ii) Date of publication

Or

(b) Briefly explain when you will “Sail around the arc”.

13. (a) (i) (1) If Compass course is 045(T) Compass error is 3° E. Find the true Course?

(2) If the Compass error is 6° W, variation is 3°E, Find the Deviation?.

(3) If the Gyro course is 115(G), Gyro error is 1° High, find the True course?

(ii) Define Variation and Deviation.

Or

(b) Explain the following:

(i) Dead Reckoning position

(ii) Observed Position

(iii) Estimated Position

14. (a) Define the following:
- (i) Sailing vessel
  - (ii) V/L constrained by her draft
  - (iii) V/I underway.

Or

- (b) What are the information you will get from “Routing charts”.
15. (a) Explain Rule no.6 “SAFE SPEED”.

Or

- (b) Explain Rule no.17 “Action by stand on vessel”

**Part C** (3 × 10 = 30)

Answer **all** questions.

16. (a) (i) Define “LOOK OUT”
- (ii) If a V/L is having sufficient sea room as per “Actions to avoid collision”, What will be your action?
- (iii) What is “IN SHORE TRAFFIC ZONE”?. Which are the ships are allowed to use ITZ as per ROR?. Explain with a diagram.

Or

- (b) (i) You are in a V/l making way in a narrow channel. You intend to over take another V/l. What will you do?
- (ii) Briefly explain how the V/L's will conduct at the joining and terminations of TSS?
- (iii) How do you use HORIZONTAL SEXTANT ANGLE for fixing a V/l's position? Explain.
17. (a) (i) Explain the conduct of vessels in "HEAD ON SITUATION"?
- (ii) Explain responsibilities between vessels as per rule no.18.
- (iii) You are in a Give way V/L. What will be your action?

Or

- (b) (i) Rule no.19 applies to which vessels?
- (ii) As per rule no.19 you have detected by RADAR alone the presence of another v/L. what will you do?
- (iii) In restricted visibility you are hearing a fog signal forward of your beam. What will be your action?

18. (a) (i) Write short notes on Notices to Mariners.

(ii) Explain about various types of Charts.

Or

(b) Briefly explain about the contents of admiralty chart catalogue?. How will you use it?

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**C-7087**

**Sub. Code**

**11635**

**B.Sc. DEGREE EXAMINATION, NOVEMBER 2022**

**Third Semester**

**Nautical Science**

**NAVAL ARCHITECTURE – II**

**(2016 onwards)**

Duration : 3 Hours

Maximum : 75 Marks

Instruction: Use Hydrostatic Particulars for solving M.V.  
Hinding problems

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. Define Centre of Gravity.
2. What are rolled sections?
3. State the particulars available in General arrangement plans of vessel.
4. Where do you find web frames in ship?
5. What is the function of Bilge keel?
6. What s the purpose of Wing tanks?
7. State the Simpson's first Rule.
8. How will you find the position of Centre of Flootation?
9. Define Trimming moment.
10. What for Ballast tanks are provided on board?



**Part B**

(5 × 5 = 25)

Answer **all** questions.

11. (a) Describe the functions of Water tight bulk.  
Or  
(b) What are Collision bulkheads? With a neat diagram explain its arrangements.
12. (a) State the purposes of Peak Tanks.  
Or  
(b) Express the arrangements provided to obtain watertightness on weather deck openings.
13. (a) What are Sounding pipes? Describe the air circulation arrangements made in Oil tanker ship.  
Or  
(b) State the factors affecting the position of Centre of Buoyancy.
14. (a) When a weight of 400 t is shifted to aft in a ship of 165 m long, it causes the ship's CG to move 0.2m horizontally and the trim to change 0.15 m. find longitudinal moment metacentric heights.  
Or  
(b) Distinguish between Stiff and Tender conditions of ship.
15. (a) State the causes of corrosion in metal and between dissimilar metals.  
Or  
(b) Enlist the Hydrostatic and Stress data supplied to ships.

**Part C**

(3 × 10 = 30)

Answer **all** questions.

16. (a) Draw the neat sketch of a Rudder and label all parts.

Or

- (b) MV HINDSHIP floating in condition No.5, discharge the entire cargo from No. Poop deck and Refrigerated Cargo spaces, No. 3 Double bottom tank(C) is filled with ballast. FSC in final condition is 0.075 m. Calculate her GM (fluid).
17. (a) “MV HINDSHIP” in a river port in water of Relative density 1.025 has a displacement of 16500 t GM is 0.68 m. FSC is 0.052 m she loads 250 t of cargo kg 7.6 m 124 t of water ballast is run into No. 2 DB tank. Find the final KG.

Or

- (b) “MV HINDSHIP” is in condition No.2, find her KM after the following operations are carried out:
- |                                       |        |                  |
|---------------------------------------|--------|------------------|
| (i) Loads                             | 1 TD   | 450 t            |
| (ii) Loads                            | 3 Hold | 1230 t, kg 1.5 m |
| (iii) Unload                          | 5 Hold | 325 t            |
| (iv) Pump in Fore peak tank           |        |                  |
| (v) Pump out No. 4 D.B. Tanks (P & S) |        |                  |
- Find FSC in the final condition in 0.17 cm.
18. (a) What are Classification societies? Explain their roles in maintaining ship’s standards.

Or

- (b) Sketch the Mid-ship section of Passenger ship and label all parts.

**C-7088**

**Sub. Code**

**11636**

**B.Sc. DEGREE EXAMINATION, NOVEMBER 2022**

**Third Semester**

**Nautical Science**

**SHIP OPERATION TECHNOLOGY — III**

**(2016 onwards)**

Duration : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

Draw diagram wherever applicable.

1. What is a “Peak tank”? Name any two peak tanks.
2. Where is collision bulk head located and what is its use?
3. What is a DB tank and its use?
4. What is the use of cross wedge mechanism on the hatch cover?
5. What are the duties of “EMERGENCY LIFE BOAT TEAM”?
6. What is a “DISTRESS SIGNAL”?
7. What is an EPIRB and its use?
8. What is “Breaches Buoy”? Briefly explain?
9. What are the pyrotechnics in a L/Boat?
10. Write any four PPE’s.

**Part B**

(5 × 5 = 25)

Answer **all** questions.

11. (a) Briefly explain about the maintenance you will carry out for navigation light.

Or

- (b) Briefly explain the maintenance of a hatch cover?

12. (a) Explain the importance of Personal health and hygiene on board ship.

Or

- (b) How will you prepare a steel surface for painting?

13. (a) Briefly explain about “SAFETY COMMITTEE MEETING” conducted on board a ship.

Or

- (b) What is a “Muster List” and its contents.

14. (a) Draw a bilge strum box and explain what kind of maintenance you will carry out?

Or

- (b) Explain the working procedure of “SART”.

15. (a) Briefly explain the role and responsibilities of “classification societies”.

Or

- (b) What are the precautions to be followed prior entering “DRY DOCK”?

**Part C**

(3 × 10 = 30)

Answer **all** questions.

16. (a) Explain the procedures and precautions to be followed for daily working in a dry dock.

Or

- (b) What is PMS? Explain the PMS schedule for a Life boat?

17. (a) Explain various search patterns for SEARCH and RESCUE operations.

Or

- (b) Explain how you will prepare your ship for “Annual SEQ SURVEY”.

18. (a) Fire in “ENGINE ROOM”. Explain the procedures for extinguishing the fire.

Or

- (b) Your ship is grounded. Explain in details about the actions to be taken for re floating your ship.

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**C-7089**

**Sub. Code**

**11637**

**B.Sc. DEGREE EXAMINATION, NOVEMBER 2022**

**Third Semester**

**Nautical Science**

**NAVIGATION – II**

**(2016 onwards)**

Duration : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

- Note : (1) Draw diagram wherever it is applicable.  
(2) Use of Norie's tables or other tables allowed.  
(3) Use of 2008 Nautical Almanac is allowed.

1. Define the term "Visible and Sensible Horizons".
2. Define the term "Greenwich Hour Angle".
3. What do you understand by the term "First point of Libra"?
4. What is the principle of sextant?
5. What is mean sun?
6. Covert the longitude into time :
  - (a) 142°38'
  - (b) 082°30'.
7. Define the term Right Ascension.

8. Define the term Zenith Distance.
9. Define the term Azimuth.
10. What do you understand by the term “Apparent Solar Day”?

**Part B**

(5 × 5 = 25)

Answer **all** questions.

11. (a) Define the following terms with a diagram :

- (i) Prime Vertical
- (ii) Observer’s meridian
- (iii) Prime meridian.

Or

- (b) Discuss the relationship between local time and Zone time.

12. (a) Explain the relationship between longitude and time.

Or

- (b) Explain “Equation of time”.

13. (a) (i) What do you understand by the term GP of a heavenly body? What are the co ordinates used to specify a Geographical Position? (4)
- (ii) State the GP of the Moon, when its GHA = 212° and Dec 22° S. (1)

Or

- (b) What do you understand by Ambiguity of Chronometer time?

14. (a) (i) On 31<sup>st</sup> Aug. 2008, PM at ship in DR 10°15' S 000°00', the chron. Showed 03h 11m 30s, Error 01m 20s fast, Find the correct GMT time on ship.
- (ii) On 5<sup>th</sup> March 2008, AM at ship in DR 38° 11' S 151° 10' E, the Chron showed 10h 54m 54s, error 00m 46s slow. Find the correct GMT on board ship.

Or

- (b) Find the LHA of the star CANOPAS on 21<sup>st</sup> Sept. 2008, PM in DR 43°18'S 140°11'W, GMT is 22D 07h 31m 04s.
15. (a) (i) Explain the term 'Intercept' with diagram.
- (ii) Find the correct GMT date and time. On 2nd March 2008 PM at ship in DR 16°12'N 092° 10'E chron time 00h 30m 12s and error 02m 06s slow.

Or

- (b) (i) What is the relationship between true altitude and true zenith distance? Explain.
- (ii) Find the deviation from the following: True Azimuth : 155.0°(T) Compass Azimuth : 151.0°(C) Variation : 1.5°W.

**Part C**

(3 × 10 = 30)

Answer **all** questions.

16. (a) Explain with diagram :
- (i) Solstices and
- (ii) Equinoxes.

Or

- (b) What is international date line? How the ship's clocks are adjusted when crossing International date line? Explain.



17. (a) On 2<sup>nd</sup> Sept. 2008, in DR  $40^{\circ} 28' N 064^{\circ} 20' E$ , the rising sun bore  $090^{\circ}(C)$ . If the variation is  $5^{\circ} W$ , find the deviation of the ship's head.

Or

- (b) On 2<sup>nd</sup> May, 2008, in DR  $20^{\circ}12' S 164^{\circ} 40'W$ , the Moon set bearing  $277.0^{\circ}(G)$ . Calculate the Gyro error and state if it is High or Low.

18. (a) On 28<sup>th</sup> April 2008 in DR  $25^{\circ}20'N 75^{\circ} 00'E$ , the sextant meridian altitude of the Moon's LL was  $42^{\circ}05.8'$ , if IE =  $1.5'$  off the arc and HE =  $25m$ , calculate the latitude and LOP.

Or

- (b) On 19<sup>th</sup> Jan 2008, PM at ship in DR  $40^{\circ} 16'5175^{\circ} 31' E$ , the sextant altitude of the sun's LL East of the meridian was  $43^{\circ} 27.4'$ , when the GPS time is 03h 48m 00s. If HE =  $22m$  and IE =  $1.2'$  on the arc, calculate the direction of LOP and the longitude where it cuts the DR latitude.

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**C – 5755**

**Sub. Code**

**11642**

**B.Sc. DEGREE EXAMINATION, APRIL 2022**

**Fourth Semester**

**Nautical Science**

**CARGO HANDLING AND STOWAGE – II**

**(2016 onwards)**

Duration : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. Name five types of containers.
2. What is a cofferdam?
3. What is spiked crude?
4. State the use of brine trap.
5. What is TML?
6. State the use of stripping pump.
7. What do you understand by IMSBC Code?
8. What are container shoes?
9. Abbreviate SMPEP. Name a few SMPEP equipment.
10. What is DOA?

**Part B**

(5 × 5 = 25)

Answer **all** questions.

11. (a) Draw a container and label its parts.

Or

- (b) Describe all the markings on a container.

12. (a) What are the precautions to be taken when dealing with refrigerated containers?

Or

- (b) What is Fumigation? Why is it necessary?

13. (a) What are the precautions to be taken prior loading coal in bulk?

Or

- (b) Name the classification of Cargoes as per IMSBC Code.

14. (a) What is BLU code?

Or

- (b) What are the precautions to be taken while loading high density cargoes?

15. (a) State the grain stability criteria.

Or

- (b) What are the checks to be carried out prior entering the pump room?

**Part C**

(3 × 10 = 30)

Answer **all** questions.

16. (a) How to carry out crude oil washing? What are the risks involved? State the advantages and disadvantages of COW.

Or

- (b) Draw the Flammability Diagram and define flammability range, LFL and UFL.

17. (a) Briefly explain how to securing free grain in filled and partly filled compartments.

Or

- (b) Briefly describe planning and stowage of containers.

18. (a) Explain with a diagram the line-up of IG system from engine room to deck and further to cargo tanks.

Or

- (b) What is a centrifugal pump explain with a diagram? What are the precautions to be taken while operating a centrifugal pump?

**C-7091**

**Sub. Code**

**11643**

**B.Sc. DEGREE EXAMINATION, NOVEMBER 2022.**

**Fourth Semester**

**Nautical Science**

**MARINE ENGINEERING AND CONTROL SYSTEMS – II**

**(2016 onwards)**

Duration : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. What is Pig Iron?
2. Define property of ductility.
3. What is the use of compressed air in ships?
4. Name two important mounting in a boiler.
5. Name the two main methods of ships steering gear.
6. What is the super-heated steam?
7. What is refrigeration system?
8. What type of electricity is generally produced in ships?
9. Name two important machineries mounted on deck?
10. Where are ceramics used in ships machinery?

**Part B**

(5 × 5 = 25)

Answer **all** questions.

11. (a) List the mountings on a ships air bottle and also enumerate the safety devices in the air bottle.

Or

- (b) Discuss the importance of natural and forced ventilation on board ships.

12. (a) What are the two major types of boilers? List the advantages and disadvantages of each one.

Or

- (b) With a sketch describe briefly the functioning of a Hydrophore.

13. (a) Briefly describe the various heat treatment methods of steel.

Or

- (b) Enumerate the various methods of steel production.

14. (a) Describe a four stroke diesel cycle.

Or

- (b) What is the difference between air conditioning and Refrigeration?

15. (a) Briefly describe the method of producing fresh water from sea-water on board ships by evaporation method.

Or

- (b) What is the purpose of a steering gear on board ships? What is the maximum puffer angle on either side?

**Part C**

(3 × 10 = 30)

Answer **all** questions.

16. (a) With a sketch describe the functioning of a centrifugal pump.

Or

- (b) List the safety devices used in the production and distribution of electricity in ships.

17. (a) Describe the following properties of metal.

- (i) Ductility,
- (ii) Malleability,
- (iii) Conductivity,
- (iv) Melting point.

Or

- (b) What is the functioning of transformers in an AC electric system?

18. (a) Enumerate all the parts of a two-stroke main propulsion engine.

Or

- (b) Sketch and describe a functioning of a two RAM electro hydraulic steering system.

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**C-5757**

**Sub. Code**

**11644**

**B.Sc. DEGREE EXAMINATION, APRIL 2022**

**Fourth Semester**

**Nautical Science**

**VOYAGE PLANNING, COLLISION PREVENTION — II**

**(2016 onwards)**

Duration : 3 Hours

Maximum : 75 Marks

- Notes : (1) Draw diagram where ever applicable.  
(2) Use of 1992 Tide tables are allowed.

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. Define the term “Mast Head Light”.
2. Define the term “Towing Light”
3. Name the shapes used for “Day Signals”
4. What is the day signal for  
(a) CBD V/L                      (b) NUC V/L
5. Name any four nautical publications.
6. What is use of “Guide to Port Entry”?
7. What do you understand by “At the Dip” and “Half Mast”?



8. What are the flags a foreign registered v/I will fly in the main mast when entering any Indian port?
9. What do you understand by a v/I hoisted with “Q flag”?
10. Name the stages in “Passage Planning”.

**Part B**

(5 × 5 = 25)

Answer **all** questions.

11. (a) What are the factors a MASTER will take into account while selecting a “Suitable Anchorage”.

Or

- (b) What are the information you will get from “Sailing Directions”?
12. (a) Write the information you will get from “Ocean Passages of the World”.

Or

- (b) Write the information you will get from “Routeing Chart”.
13. (a) What are the “Day and Night Signals” a “Fishing V/L” will display when the gear is extending more than 150 m length?

Or

- (b) Write down the “Day And Night Signals” a “Dredger” will display. When the length is more than 50M and is having obstruction.

14. (a) What are the “Visibility Of The Lights” of the following:
- (i) V/L more than 50 M in length
  - (ii) V/L is more than 12 M in length and less than 50 M in length.

Or

- (b) Draw a “Traffic Lane” and a “Separation Zone” and explain.
15. (a) What are the contents of “Notices to Mariners”?

Or

- (b) What is a ‘Plan’ of a chart? What are the “Advantages” of Plan when comparing to coastal charts when approaching a port?

**Part C** (3 × 10 = 30)

Answer **all** questions.

16. (a) Explain in detail about “Ecdis”.

Or

- (b) Explain passage planning in details.

17. (a) Write in detail about “Sound signals in restricted visibility”(Rule no.35).

Or

- (b) Briefly explain about the contents of admiralty chart catalogue? How will you use it?

18. (a) Given the following extracts from the TIDE tables, find the Standard time during the afternoon on 28<sup>th</sup> FEB at which there will be 5 mtrs of water over a shoal patch where the chart shows 2 mtrs sounding, off the port of DARWIN (Australia).

Extract from ATT

Time	Height
0018	2.7 M
0557	6.2 M
1223	1.5 M
1832	7.0 M

Or

- (b) Find the height of tide at 1930 hrs. Standard time on 4<sup>th</sup> FEB at Darwin. Extract from the tide tables for the day under reference are as under:

Extract from ATT

Time	Height
0315	1.7 M
0904	6.5 M
1502	1.9 M
2112	6.9 M

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**C-5758**

**Sub. Code**

**11645**

**B.Sc. DEGREE EXAMINATION, APRIL 2022**

**Fourth Semester**

**Nautical Science**

**NAVAL ARCHITECTURE – III**

**(2016 onwards)**

Duration : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. State the effects on draught when a small amount of mass is added.
2. What is Dipping moment while Dry Docking?
3. Define Centre of Gravity.
4. What do you understand by the term Butt joint?
5. What is the role of LRS with respect to classification of ships?
6. Describe 'LOA'.
7. Define Center of Flootation of ship.
8. State the permeability limit of Machinery space of ship.
9. What would be the position of C.G of a hanging mass?
10. Where is the center of pressure of a upside down triangular shape?

**Part B**

(5 × 5 = 25)

Answer **all** questions.

11. (a) What do you understand by the term bilging?  
Explain with a neat diagram.

Or

- (b) State the contents of a General arrangement drawing with a diagram.

12. (a) Describe the six movements of a ship.

Or

- (b) Give brief notes on Load line markings.

13. (a) State the different types Fire classification and suitable extinguishers for each fire.

Or

- (b) Enlist the safety precautions to be observed while docking the ship.

14. (a) What is Launching? How will you prepare the newly constructed ship for Launching operation?

Or

- (b) A ship of 5000 tonne displacement has a mass of 250 tonne on forepeak at 55 m forward of mid-ship. Calculate the shift in centre of gravity of the ship if the mass is moved to a position of 7 m forward of mid-ship.

15. (a) A ship of 5000 tonne displacement, 125 m long floats at a draught of 5.3 m. Calculate the wetted surface area of the ship.

Or

- (b) Distinguish the difference between Stiff and Tender conditions of ship with an aid of neat diagram.

**Part C** (3 × 10 = 30)

Answer **all** questions.

16. (a) What is Angle of Loll? Derive the equation for angle of Loll.

Or

- (b) A ship of 125 long, COP 1.6 m aft of mid-ship, MCT1C 85 tonne floats at 6.6 m fwd. and 9.3 m aft. Find the new draught, if the 350 tonne is discharged from a position of 40 m abaft of mid-ship.

17. (a) Drive the equation for change in trim due to change in density.

Or

- (b) State the three conditions of equilibrium with neat sketches.

18. (a) Draw the organization chart of ship building process.

Or

- (b) Write notes with suitable diagram on:

- (i) Metacenter
- (ii) Metacentric height
- (iii) Centre of Floatation.
- (iv) Centre of Buoyancy.



**C-7094**

**Sub. Code**

**11646**

**B.Sc. DEGREE EXAMINATION, NOVEMBER 2022**

**Fourth Semester**

**Nautical Science**

**NAVIGATION — III**

**(2016 onwards)**

Duration : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. Define 'Rhumb line'.
2. What do you understand by term International date Line?
3. Describe Solar eclipse.
4. At what angle earth's axis is inclined to the plane of the orbit?
5. What is occultation of Planets?
6. State the use of GPS.
7. What are heavenly bodies?
8. What do you understand by the term hanging shadow on the moon.
9. Describe VDR.
10. What is the speed of soundwaves in underwater?



**Part B**

(5 × 5 = 25)

Answer **all** questions.

11. (a) Discuss the Great circle sailing.

Or

- (b) Distinguish between moon's orbit and axial rotation.

12. (a) Explain the uses of circumpolar bodies.

Or

- (b) Describe the regression of the lunar.

13. (a) State the uses of Navtex on board vessels.

Or

- (b) Describe the influences of RADAR for ship's voyage.

14. (a) Enumerate the heavenly bodies and its uses.

Or

- (b) Enlist the navigation equipments provided on Bridge.

15. (a) How does the AIS held the ship for the ship voyage

Or

- (b) What are the inputs to be provided for the coarse recorder and the stylese?

**Part C**

(3 × 10 = 30)

Answer **all** questions.

16. (a) On 10<sup>th</sup> Aug 2008 in DR 30°13' S 110°12' E compute the sextant meridian altitude of moon's LL if IE was 1.2 on the arc and HE was 12 m.

Or

- (b) Discuss the procedure to find the Course and Distance between two points on Earth's surface with neat diagram.
17. (a) Discuss the working principles and uses of GPS for maritime sector.

Or

- (b) On 23<sup>rd</sup> Aug 2009 in DR 35° 55'S 002° 35'W at about 1600 hours at ship, the Sextant altitude of star SPICA was 41° 45' when chron showed 05H 00M 10S. If HE was 10 m IE was 2.5' on the arc. Calculate the intercept and direction of LOP.
18. (a) Explain the working principle of echo-sounder with neat diagram.

Or

- (b) Explain coarse recorder. Express how it works.

**C-7095**

**Sub. Code**

**11651**

**B.Sc. DEGREE EXAMINATION, NOVEMBER 2022.**

**Fifth Semester**

**Nautical Science**

**CARGO HANDLING AND STOWAGE – III**

**(2016 onwards)**

Duration : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

Draw diagrams wherever applicable.

1. What will be the effect on stability due to ice absorption of timber deck cargo?
2. Why do you carry out regular inspection of lashings of timber deck cargo?
3. What do you understand by the term “THIRD PARTY DAMAGE”?
4. What do you understand by the term “CARGO CLAIMS”.
5. What do you understand by the term “Heavy lift”?
6. What is the use of IMDG code?
7. What is the importance of labelling of IMDG cargo?
8. Define LFL and UFL?
9. Define the term certificate of fitness?
10. What do you understand by “Emergency Shut down procedure” on tankers?

**Part B**

(5 × 5 = 25)

Answer **all** questions.

11. (a) Explain different lashing arrangements of timber deck cargo with simple diagrams.

Or

- (b) Describe the stability requirement of timber deck cargo.

12. (a) What is meant by 'CHARTER PARTY'. Briefly explain different charter parties.

Or

- (b) What is meant by B/L? Briefly explain any TWO B/L's.

13. (a) Write short notes on: (i) UN NO. (ii) EMS schedule (iii) Dangerous cargo Manifest

Or

- (b) (i) What is the criteria for carrying "EXPLOSIVES" in a passenger ship?

- (ii) Define "MFAG". How do you use it in case of emergency?

14. (a) (i) What is the use of "VAPOUR RETURN LINE"?

- (ii) What are the types of pumps used in a Chemical carrier?. Briefly explain the working of any ONE pump.

Or

- (b) What are the precautions you will observe when discharging IMDG cargo?

15. (a) Explain the CARGO DOCUMENTATION of a chemical tanker?

Or

- (b) Briefly explain fully refrigerated and semi refrigerated gas tankers.

**Part C** (3 × 10 = 30)

Answer **all** questions.

16. (a) (i) Explain the hazards involved in carrying “TIMBER DECK CARGOES”.  
(ii) Describe the action if the timber deck cargo is lost overboard.

Or

- (b) What is meant by “NOTE OF PROTEST”? What are the supporting documents for note of protest?

17. (a) (i) Write down different classifications of IMDG cargo?  
(ii) What is meant by “SEGREGATION OF DANGEROUS CARGOES”? Explain segregation with the help of diagrams.

Or

- (b) What are the precautions taken for discharging heavy lift cargoes? Explain in Detail.

18. (a) Explain the procedure of loading chemical cargo.

Or

- (b) Explain reliquification plant and boil off control system in GAS carriers

**C-7096**

**Sub. Code**

**11652**

**B.Sc. DEGREE EXAMINATION, NOVEMBER 2022.**

**Fifth Semester**

**Nautical Science**

**VOYAGE PLANNING COLLISION PREVENTION – III**

**(2016 onwards)**

Duration : 3 Hours

Maximum : 75 Marks

Draw diagram wherever applicable.

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. What is the meaning of distress and Urgency?
2. What are the frequencies for “DSC Distress MF and HF alerts and Radio telephony calling”?
3. Expand the term “GMDSS”. What are the uses of GMDSS?
4. Define the meaning of “SAFETY NET”.
5. What is the meaning of “VTIS” and its uses?
6. What is the use of “NBDP”?
7. How many sections “GMDSS LOG BOOK” contain?
8. What do you understand by “AMVER”?
9. Define “NUC V/L” and what is the day signal of NUC v/I?
10. Define “Geographical Range”.

**Part B**

(5 × 5 = 25)

Answer **all** questions.

11. (a) Write down the procedure of making DISTRESS CALL by RADIO TELEPHONY.

Or

- (b) State the uses of radio communication equipments on board ship.
12. (a) What is distress alert? What is your action on receiving distress alert from another vessel?

Or

- (b) What is NAVTEX? Briefly explain the uses and functions of “NAVTEX”.
13. (a) (i) What is “IN SHORE TRAFFIC ZONE”? Which vessels can sail in ITZ?
- (ii) How you cross a TSS? How do you join or leave a TSS?

Or

- (b) You sight an AGROUND V/L more than 100 length in your watch. What are the lights it will show and the action you will take?
14. (a) Explain the procedure of “OVER TAKING” in a NARROW CHANNEL?

Or

- (b) Define Isolated danger mark and describe the characteristics of lights of isolated danger mark with diagram.

15. (a) Explain the precautions you will take while using floating objects for position fixing.

Or

- (b) What do you understand by INSPIRES and its reports? What are the contents of a sailing plan?

**Part C** (3 × 10 = 30)

Answer **all** questions.

16. (a) What are the different areas of GMDSS?. Explain each area and the equipment requirements?

Or

- (b) Write down the “9 specific functions” GMDSS vessels has to comply with.

17. (a) Briefly describe the different CHECKS and TESTS of GMDSS equipments.

Or

- (b) (i) What do you understand by SEARCH AND RESCUE?

(ii) Describe the different SAR methods?

18. (a) Name any ten distress signals Annex IV of ROR.

Or

- (b) (i) What do you understand by ALRS and different Volumes of ALRS?

(ii) Briefly explain all ALRS volumes and its contents?



**C-7097**

**Sub. Code**

**11653**

**B.Sc. DEGREE EXAMINATION, NOVEMBER 2022**

**Fifth Semester**

**Nautical Science**

**COMPUTER PROGRAMMING AND UTILITIES**

**(2016 onwards)**

Duration : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. State the components of database.
2. What are the functions of Arithmetic and Logic Unit?
3. Describe control unit.
4. Write short notes on Relational model.
5. Name the various types of databases.
6. Define RDMBS.
7. Name any two mathematical functions used in spreadsheet.
8. Enlist the application of Internet.
9. Describe Internet service provider.
10. List any two Spreadsheet Commands.

**Part B**

(5 × 5 = 25)

Answer **all** questions.

11. (a) Discuss about various kinds of output devices with neat diagram.

Or

- (b) Describe types of computer memory.

12. (a) Describe the functions of Database.

Or

- (b) Write short notes on Data Dictionary.

13. (a) Describe “C” characteristic set.

Or

- (b) Explain the process of declaration and manipulation of ‘2D’ arrays.

14. (a) Describe between Intranet and Extranet.

Or

- (b) State the types of Networks.

15. (a) Explain the standard function of MS Excel with examples.

Or

- (b) Describe Internet security.

**Part C**

(3 × 10 = 30)

Answer **all** questions.

16. (a) Explain the generation of computer in detail.

Or

- (b) Discuss about Data definition Language, Data Manipulation language and SQL commands with examples.

17. (a) Explain in detail about various network topologies with neat diagram.

Or

- (b) Discuss about Relational Database in detail.

18. (a) Describe the procedures for the following in the spread sheet cell:

- (i) Enter employee names and their basic pay, allowances and deductions.
- (ii) Aligning the text in left (Name of the employee)
- (iii) Include formula to calculate gross-pay and net-pay.

Or

- (b) Explain about creation and formatting of various types of charts in spread sheet with necessary examples.

**C-7098**

**Sub. Code**

**11654**

**B.Sc. DEGREE EXAMINATION, NOVEMBER 2022**

**Fifth Semester**

**Nautical Science**

**SHIPPING MANAGEMENT**

**(2016 onwards)**

Duration: 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. What do you understand by the term HRM?
2. State Organizational behaviour.
3. Describe 'Man power planning'.
4. Write short notes on Cargo management.
5. What is the role of port?
6. What for IMO numbers provided to ships?
7. What are the functions of Operational department in shipping companies?
8. Define the roles of freight broker.
9. Describe World scale.
10. What do you understand by the term Charter party?

**Part B**

(5 × 5 = 25)

Answer **all** questions.

11. (a) Describe the term Managerial economics.

Or

- (b) Write short notes on Management Information System.

12. (a) Describe the Shipping Management in detail.

Or

- (b) Give brief notes on evolution of World Merchant Fleet.

13. (a) State the role of ports on controlling shipping traffic.

Or

- (b) What are the functions of Indian ports?

14. (a) Describe the Matrix structure of shipping companies.

Or

- (b) How do Freight rates are fixed?

15. (a) Differentiate between Liner and Tramp services.

Or

- (b) What is Bill of Lading? Name the types of Bill of lading.

**Part C**

(3 × 10 = 30)

Answer **all** questions.

16. (a) Explain the Organization of a shipping company during 1950's.

Or

- (b) What are the procedures of custom's House for a ship prior to entering discharge port?

17. (a) Discuss the intermediary's role in shipping business.

Or

- (b) Explain the procedures to obtain port clearance prior to leaving a port.

18. (a) List down the documents required related to ship cargoes.

Or

- (b) Discuss the different types of Chartering in detail.

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**C-7099**

**Sub. Code**

**11655**

**B.Sc. DEGREE EXAMINATION, NOVEMBER 2022**

**Fifth Semester**

**Nautical Science**

**METEOROLOGY AND OCEANOGRAPHY – I**

**(2016 onwards)**

Duration : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. What is Ozone depletion?
2. Define Barometric tendency.
3. How will you measure the wind speed?
4. Describe Diurnal variations of pressure.
5. Define Coriolis force.
6. State Geostrophic wind.
7. What is 'Hail'?
8. What is the value of atmospheric pressure at sea level?
9. What is 'Relative humidity'?
10. Differentiate between 'Waves and Swell'.

**Part B**

(5 × 5 = 25)

Answer **all** questions.

11. (a) State the process of Heat exchange in atmosphere.

Or

- (b) Write short notes on Air pollution.

12. (a) Describe Horizontal and Vertical distribution of atmospheric pressure.

Or

- (b) Give brief notes on Beaufort scale of wind force.

13. (a) State the influence of weather on shipping industry.

Or

- (b) State the process of clouds formation.

14. (a) Define weather. Describe the various tools used to predict weather conditions.

Or

- (b) How does Fog formed? What is its effect on visibility?

15. (a) Differentiate between Warm and Cold current.

Or

- (b) With an aid of neat sketch explain the whirling Psychrometer.



**Part C**

(3 × 10 = 30)

Answer **all** questions.

16. (a) With a simple sketch explain the various layers of Atmosphere.

Or

- (b) Explain the Greenhouse effect in detail.

17. (a) Discuss the impact of Wind on Maritime industries.

Or

- (b) What is True and Apparent wind? Explain how does the true wind is calculated with the help of neat sketch.

18. (a) Discuss the Ocean circulation system in detail.

Or

- (b) With an aid neat sketch explain the Barograph.

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**C-7100**

**Sub. Code**

**11656**

**B.Sc. DEGREE EXAMINATION, NOVEMBER 2022**

**Fifth Semester**

**Nautical Science**

**NAVIGATION – IV**

**(2016 onwards)**

Duration : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

(Note: 1. Draw diagram wherever it is applicable.

2. Use of Tide tables or other tables allowed.

3. Use of 2008 Nautical Almanac is allowed.)

1. What do you mean by constellation?
2. What do you understand by “telegraph alarm”?
3. What is the meaning of “tank pressure alarm”?
4. What do you understand by ‘NAVIGATION LIGHT ALARM’?
5. What is the use of “AUTO PILOT”?
6. What do you understand by ‘OFF COURSE ALARM’?
7. What do you understand by “DIURNAL TIDE”?
8. Define “CHART DATUM”.

9. What is the purpose of “VDR”?
10. What is the use of “AIS”?

**Part B**

(5 × 5 = 25)

Answer **all** questions.

11. (a) Describe:
  - (i) Write down any five alarms on bridge.
  - (ii) What action will you take upon hearing each alarm?

Or

- (b) During your watch you hear “Smoke detector alarm”? Explain your actions in details.
12. (a) What are the alarms associated with Steering gear? Explain. What action will you take upon hearing each alarm?

Or

- (b) Briefly explain the principle and working of an Auto pilot.
13. (a) Draw a neat sketch of different levels of tide and mark them.

Or

- (b) What is tidal stream? What is the equilibrium theory of tides?
14. (a) Explain the principle of Doppler shift.

Or

- (b) Briefly explain the care and maintenance of Gyro compass.

15. (a) Enumerate the benefits of S – VDR.

Or

(b) Briefly discuss about the errors of an Echo sounder.

**Part C**

(3 × 10 = 30)

Answer **all** questions.

16. (a) Explain the principle and operation of any one type of Doppler log.

Or

(b) Explain the Principle and working of AIS.

17. (a) What is VDR? State the information available in VDR.

Or

(b) Explain Lunar tide in detail.

18. (a) Find the height of tide at 1930 hrs. Standard time on 4<sup>th</sup> FEB at DARWIN.

Extract from the tide tables for the day under reference are as under:

EXTRACT FROM ATT

TIME	HEIGHT
0315	1.7 M
0904	6.5 M
1502	1.9 M
2112	6.9 M

Or

- (b) Find the time at which there will be 7.0 mtrs of water in the afternoon of 27<sup>th</sup> April on a shoal patch, off Darwin where the chart shown 3 mtrs sounding.

Extracts from the Adm. Tide Tables for the day are as follows:

TIME	HEIGHT
0550	6.6 M
1157	2.5 M
1743	6.30 M

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**C-2745**

**Sub. Code**

**11661**

**B.Sc DEGREE EXAMINATION, NOVEMBER 2022**

**Sixth Semester**

**Nautical Science**

**MARINE ENVIRONMENTAL PROTECTION**

**(2016 onwards)**

Duration : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. Write the Marpol regulations for pumping out bilges from machinery spaces.
2. What is Annex-I of Marpol?
3. Expand NPDES.
4. What is the oil filtering equipment used onboard the ships?
5. Define SOPEP.
6. What is the use of incinerator?
7. What are the special areas with respect to shipping?
8. Define the term survey.
9. What is meant by Ballast water management?
10. What is IMDG code?

**Part B**

(5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Explain the discharge regulations for oil in ECA and non-ECA area.

Or

- (b) What is SOPEP? List the equipments in SOPEP locker.
12. (a) (i) What are the special areas restricted under MARPOL?  
(ii) Define COW and state its advantages.

Or

- (b) (i) What are the different categories of noxious liquid substances?  
(ii) What is IMDG and IBC?
13. (a) List out all MARPOL certificates and state its duration and validity.

Or

- (b) Define:  
(i) BOD  
(ii) TDS in biological sewage treatment plant
14. (a) Write the Prewash checklist in crude oil washing.

Or

- (b) Write the air pollution regulations which includes SO<sub>x</sub> and NO<sub>x</sub>?

15. (a) (i) What is garbage record book?  
(ii) What are the entries in garbage record book?

Or

- (b) (i) What is anti fouling paint?  
(ii) What is green house gas emission?

**Part C** (3 × 10 = 30)

Answer **all** questions, choosing either (a) or (b).

16. (a) Define the following:  
(i) sludge tank  
(ii) clean ballast tank  
(iii) slop tank  
(iv) oily bilge water  
(v) crude oil

Or

- (b) Explain in detail about the surveys undergone in Annex-I of MARPOL.

17. (a) (i) what does Annex–III say?  
(ii) Explain in detail about the marking, labeling and documentation of harmful substances in packaged form?

Or

- (b) (i) What is incinerator?  
(ii) Explain the sludge burning procedure of incinerator.



18. (a) Define the following:
- (i) BWM
  - (ii) ODMCS
  - (iii) PSC
  - (iv) OPA-90
  - (v) Segregated ballast tank

Or

- (b) Define the following:
- (i) product carriers
  - (ii) anti fouling paint pollution
  - (iii) anti pollution equipment
  - (iv) ozone depletion
  - (v) greenhouse gas.
-

**C-5767**

**Sub. Code**

**11662**

**B.Sc. DEGREE EXAMINATION, APRIL 2022**

**Sixth Semester**

**Nautical Science**

**SEAMANSHIP PRACTICES**

**(2016 onwards)**

Duration : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. What is the difference between knot and hitch?
2. How will you increase the flexibility of steel wire rope?
3. What is Boot topping area?
4. How will you measure the thickness of hull plating at dry dock?
5. Define the term heaving of anchor.
6. What is the purpose of Swivel piece?
7. State the safety measures to be followed while working aloft at dry dock.
8. Specify the maximum and minimum capacity of Life boats on merchant vessels.

9. Enlist the preferred order of extinguishers for Engine room.
10. Define UMS ship.

**Part B** (5 × 5 = 25)

Answer **all** questions.

11. (a) What precautions and maintenance are to be carried out for Synthetic rope?

Or

- (b) Name the various Anodes used for Hull protection. Why do we prefer Zinc anodes for underwater hull protection.

12. (a) Explain marking of Anchor chain cable with neat diagram.

Or

- (b) Discuss the process of rigging Gangway while ship is at port.

13. (a) Express the works carried out during dry dock.

Or

- (b) Draw the diagram of Foam type portable extinguisher and label the parts.

14. (a) Which type of extinguishant is most suitable for Engine room? Justify your answer.

Or

- (b) What are Davits? Explain the radial type of davits with neat sketch.

15. (a) Draw neat diagram Draught markings and mention the sizes, location.

Or

- (b) How will you transfer the crew from stranded ship? Explain with neat sketch.

**Part C** (3 × 10 = 30)

Answer **all** questions.

16. (a) With neat diagram discuss the process of mooring a ship along side of a Wharf.

Or

- (b) Draw any four types of knots and mention their uses.

17. (a) Explain the process of Heaving of anchor.

Or

- (b) Enlist the Lifesaving appliances provided on board ship.

18. (a) Explain the Navigational watch keeping at Bridge at sea.

Or

- (b) State the various safety precautions are to be made for rough weather.

**C-5768**

**Sub. Code**

**11663**

**B.Sc. DEGREE EXAMINATION, APRIL 2022**

**Sixth Semester**

**Nautical Science**

**CONVENTIONS AND REGULATIONS**

**(2016 onwards)**

Duration : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** the questions.

1. What is a code?
2. Describe MEPC.
3. What is ITF?
4. What is clean ballast?
5. List the LSA equipment's that are to be inspected weekly/monthly.
6. Define Exclusive Economic Zone.
7. Define territorial Sea.
8. Define ISPS.
9. Name the special areas under Annex V of MARPOL.
10. What is ISM?

**Part B**

(5 × 5 = 25)

Answer **all** the questions.

11. (a) Describe the role of the DPA and state in what instance you might contact them?

Or

- (b) Name and describe at four codes made mandatory by SOLAS.

12. (a) What is ILO? Demonstrate a general knowledge of contents of the MIC.

Or

- (b) Name the certificates and their validity issued for MARPOL Annexes to prove compliance.

13. (a) What is SEEMP?

Or

- (b) What is the discharge criteria from cargo spaces inside special areas under Annex I?

14. (a) Define

- (i) Baseline
- (ii) Internal waters
- (iii) Contiguous zone
- (iv) Hot pursuit
- (v) Continental shelf

Or

- (b) Describe the categories of NLS as per Annex II.

15. (a) Write a short note on STCW convention.

Or

(b) What is SSO, CSO and PFSO? What are their duties?

**Part C**

(3 × 10 = 30)

Answer **all** the questions.

16. (a) State the main three responsibilities of IMO. What is an IMO code and why do they exist? Give some examples of IMO code.

Or

(b) Define

- (i) Oil
- (ii) Crude Oil
- (iii) Oil residue
- (iv) PPM
- (v) Oily bilge water
- (vi) Segregated ballast Tanks
- (vii) ODMCS
- (viii) COW
- (ix) SOPEP
- (x) IOPP Certificate

17. (a) Explain in detail the contents of SOLAS Convention.

Or

(b) Explain the standard layout of a convention. What do you understand by ratifying a Convention?

18. (a) State the conduct of vessels in restricted visibility as per COLREGS.

Or

(b) How will you determine Risk of collision as per COLREGS?

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**C-5769**

**Sub. Code**

**11664**

**B.Sc. DEGREE EXAMINATION, APRIL 2022**

**Sixth Semester**

**Nautical Science**

**MARITIME LAW**

**(2016 onwards)**

Duration : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. What is criminal law?
2. What is tort?
3. What do you understand by restoration?
4. What is an insurable interest in a policy?
5. What is general average?
6. Define salvage and salvor.
7. Define maritime lien.
8. What is a voidable contract?
9. What is a treaty?
10. Define ISPS.

**Part B**

(5 × 5 = 25)

Answer **all** questions.

11. (a) What is breach of contract? What are the remedies for the breach?

Or

- (b) Define valid void and void able contracts.

12. (a) What is marine insurance? Explain different types of marine insurance?

Or

- (b) Write a short note on P and I club.

13. (a) Briefly describe the specialised agencies that regulate the Maritime Law.

Or

- (b) What are your duties as a 3<sup>rd</sup> officer as per ISPS?

14. (a) Describe the Examinations for, and grant of, certificates of officers as per MSA 58.

Or

- (b) Describe the form of certificate of competency granted under the MSA 58.

15. (a) Write about the Law of Salvage and LOF.

Or

- (b) What do you understand by abandonment of seafarers?

**Part C**

(3 × 10 = 30)

Answer **all** questions.

16. (a) Write short notes each on governmental/non governmental departments dealing with shipping.

Or

- (b) What amounts to Frustration in a contract and how to deal with it?

17. (a) What do you understand by Breach of contract and discharge of contract?

Or

- (b) What mechanism is in place to ensure welfare of Seamen?

18. (a) What is a Ship in maritime law and what is not?

Or

- (b) As per pilotage Act, what is the liability of a pilot versus responsibility of a master?
-

**C-5770**

**Sub. Code**

**11665**

**B.Sc. DEGREE EXAMINATION, APRIL 2022**

**Sixth Semester**

**Nautical Science**

**METEOROLOGY AND OCEANOGRAPHY – II**

**(2016 onwards)**

Duration : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** the questions.

1. Define SALINITY. How do you measure the salinity of water?
2. What is EMISSION?
3. Define Terrestrial Radiation.
4. What is the relationship between “Temperature and Density”?
5. What is Global warming?
6. Define TRS.
7. What are the local names of TRS?
8. Define vortex of a TRS.
9. Define ITCZ.
10. What is the function of weather facsimile receiver?

**Part B**

(5 × 5 = 25)

Answer **all** the questions.

11. (a) What is a Barograph? Explain its working principle.

Or

- (b) Explain the Horizontal Distribution of temperature of ocean.

12. (a) Explain weather reporting and recording procedures.

Or

- (b) What is the Greenhouse effect and what causes it? How does it affects the climate?

13. (a) Define Sea breeze and Land breeze.

Or

- (b) Explain the wind and pressure system over the Ocean.

14. (a) What are the limitations of weather routing?

Or

- (b) What is a Synoptic Chart? How do you read it?

15. (a) State the Origin, movement and life span of a hurricane.

Or

- (b) What are the ideal conditions for the formation of a Typhoon?

**Part C**

(3 × 10 = 30)

Answer **all** the questions.

16. (a) With the help of a diagram explain the Global Wind and Pressure Patterns.

Or

- (b) Define
- (i) Doldrums
  - (ii) Westerlies
  - (iii) Polar Easterlies
  - (iv) ITCZ
  - (v) Local winds.

17. (a) State the principle, construction, operation use of Aneroid Barometer.

Or

- (b) Explain the vertical temperature distribution of ocean and the three layer system.

18. (a) What are the warning signs of an approaching TRS? What are the actions to be taken when approach of a TRS is confirmed?

Or

- (b) What is routeing of ships, what are the factors to be considered while routeing? What are the advantages of routeing?
-

**C-5771**

**Sub. Code**

**11666**

**B.Sc. DEGREE EXAMINATION, APRIL 2022.**

**Sixth Semester**

**Navigation – V**

**NAUTICAL SCIENCE**

**(2016 onwards)**

Duration : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. Why do we use different Compasses on board ship?
2. Define coefficient apparent 'A'.
3. Enumerate the causes of magnetism in the ship's structure.
4. State the uses of Radar.
5. What is differential UPS?
6. What is AIS? State the frequency of this report.
7. Define SONAR system.
8. What do you understand by the term 'Transducer'?
9. What is RACON?
10. How does the VDR help in tracking of ships?

**Part B**

(5 × 5 = 25)

Answer **all** questions.

11. (a) How does the Radar use for safe navigation in collision avoidance situation.

Or

- (b) What is induced B (IB)

12. (a) Explain the working principle of GPS.

Or

- (b) Describe the earth's magnetic field with respect to variation of the compass.

13. (a) Describe the working principle of EPIRB.

Or

- (b) State the working principle of SAR-SAT Navigation system.

14. (a) Explain the similarities and differences between GNSS and GPS.

Or

- (b) Explain the errors affecting the accuracy of soundings of depth by Echo sounder.

15. (a) Describe the method of ship-to-ship data exchange.

Or

- (b) What is S-VDR? State the information available in this system in any emergency situation.



**Part C**

(3 × 10 = 30)

Answer **all** questions.

16. (a) Explain the segments of GPS with simplified block diagram.

Or

- (b) With an aid of neat sketch explain the working principle of Echo Sounder.

17. (a) Explain the various ways and means available for safe voyages for merchant vessels.

Or

- (b) How does phasing assist and affect in accuracy to obtain depths at long ranges.

18. (a) Calculate the value of coefficient A. If the following deviations were known to exist:

Comp Hdg :	N	N	E	E	SE	S	SW	W	NW
Deviation :	8°E	3°F	2°W	5°W	1°W	5°F	2°F	1°W	

Or

- (b) While steering 044°(T) and 16 knots the following observations were made on the radar screen:

Ship's time	Bearings	Range (M) (T)
1100	004°	6.5
1200	005°	6.0
1230	004°	5.6

Find:

- (i) CPA and TCPA
- (ii) Course and speed of target.
- (iii) Aspect at 0945

**C-7015**

**Sub. Code**

**17/18/19/24/  
25/26/27/28**

**U.G. DEGREE EXAMINATION, NOVEMBER 2022**

**First Year / Second Semester**

**Nutrition and Dietetics**

**ENVIRONMENTAL STUDIES**

**(Common for All Degree Courses)**

**(2016 onwards)**

Duration : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. Define Habit.
2. Mention the importance of environmental studies.
3. Define Renewable resources.
4. Explain the process of land degradation.
5. Food web.
6. Define Biodiversity.
7. What is meant by Noise pollution?
8. Merits of Air pollution.
9. What is meant by rural?
10. Define River.

**Part B**

(5 × 5 = 25)

Answer **all** questions.

11. (a) Give an account on Deforestation.

Or

- (b) Enumerate the salient features about environment.

12. (a) Comment on Mineral resources.

Or

- (b) Write a short note on Effect on forest and tribal people.

13. (a) Give an account on insitu and ex- Situ conservation of biodiversity.

Or

- (b) Write a short notes on value of Biodiversity.

14. (a) Illustrate about causes, Effects and control measures of Nuclear hazards.

Or

- (b) Explain briefly about the demerits of soil pollution.

15. (a) Give an account on to document environmental assets of hill mountain.

Or

- (b) Comment on river ecosystem.

**Part C**

(3 × 10 = 30)

Answer **all** questions.

16. (a) Explain in briefly about the role of individual in conservation of natural resources.

Or

- (b) Give an account on Equitable use of resources for sustainable lifestyle.

17. (a) Write a short notes on India as a mega diversity Nation.

Or

(b) Give a detailed note on causes, effects and control measures of Noise pollution.

18. (a) Write a short note on study of common insects and birds.

Or

(b) Discuss in detail about biodiversity at global, National and Local levels.

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**C-5666**

**Sub. Code**

**17/18/19/24/25  
/26/27/28**

**Common for all UG B.Sc./B.B.A  
DEGREE EXAMINATION, APRIL 2022**

**First Year/ Second Semester**

**ENVIRONMENTAL STUDIES**

**(2016 onwards)**

Duration : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. Define Nature.
2. Name any two non - renewable energy resources.
3. What is conflicts?
4. Define overgrazing.
5. Write a note on sustainable life style.
6. What is Mega Diversity?
7. Define Hot spot.
8. What is Eutrophication'?
9. Make a note on noise pollution.
10. What is pollution?

**Part B**

(5 × 5 = 25)

Answer **all** questions.

11. (a) Give an account on the importance of environmental studies.

Or

- (b) How do you make public awareness on environmental issues? Explain.

12. (a) Write about the future problems upon over utilization of ground water.

Or

- (b) How the modern agriculture practices affects the quality of food resources? Explain.

13. (a) Give a detailed account on the problems in using fertilizer and pesticides on environment.

Or

- (b) Write a note on the concepts of ecosystem.

14. (a) Explain the energy flow in a forest ecosystem.

Or

- (b) Briefly explain the value of Biodiversity.

15. (a) What are the major threats to the Biodiversity? Explain.

Or

- (b) How do you document an environmental issue during the field visit? Explain.

**Part C**

(3 × 10 = 30)

Answer **all** questions.

16. (a) Give an account on utilization of renewable and non renewable energy resources.

Or

- (b) Discuss on the use of alternate energy resources for the future of the nation.

17. (a) Describe the in-situ and ex-situ method of Conservation of biodiversity.

Or

- (b) Give a detailed account on the status of Biodiversity at National and Global levels.

18. (a) Explain the control measures of Water pollution.

Or

- (b) Write in detail about hazards of radiation raised from Nuclear wastes.