

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.

C-5669

Sub. Code

11H

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

First Year – First Semester

Part I – Hindi

STORY, NOVEL, GRAMMAR AND TRANSLATION

(Common for all U.G. Degree Courses)

(2016 to 2018 onwards)

Duration : 3 Hours

Maximum : 75 Marks

खंड - क

(10 × 2 = 20)

सभी प्रश्नों के उत्तर संक्षेप में लिखिए।

1. प्रेमचन्द के उपन्यासों में किन्हीं चार का नाम लिखिए।
2. लहनासिंह ने बोधासिंह को कैसे बचाया?
3. मोहनलालजी महता 'वियोगी' का संक्षिप्त परिचय दीजिए।
4. कौन किस के लिये क्या प्रायश्चित्त करता है?
5. उदयभानुलाल को किसने मार डाला और क्यों?
6. भुवनमोहन सिन्हा का संक्षिप्त परिचय दीजिए।
7. कृष्णा का संक्षिप्त परिचय दीजिए।
8. भालचन्द्र सिन्हा का संक्षिप्त परिचय दीजिए।

9. लिंग किसे कहते हैं? उनके कितने प्रकार हैं?
10. वचन कैसे कहते हैं? उनके कितने प्रकार हैं?

खंड - ख

(5 × 5 = 25)

सभी प्रश्नों के उत्तर दीजिए। उत्तर संक्षेप में हो।

11. (a) लाल बिहारी का संक्षिप्त परिचय दीजिए।
(या)
(b) 'प्रायश्चित्त' कहानी की शीर्षक की सार्थकता पर विचार कीजिए।
12. (a) 'उसने कहा था' इस कहानी में कौन किससे क्या कहा था?
(या)
(b) पाँच मिनट की मुलाकात में गोपाल ने बाबूजी से क्या कहा?
13. (a) तोताराम के साथ निर्मला की शादी किस हालत में हुई?
(या)
(b) जियाराम ने आत्महत्या क्यों की?
14. (a) सियाराम किसके साथ भाग गया और क्यों?
(या)
(b) कल्याणी और उदयभानुलाल के बीच में झगडा क्यों हुआ?
15. (a) 'कारक' किसे कहते हैं? उनके भेदों को उदाहरण सहित समझाइए।
(या)
(b) संज्ञा किसे कहते हैं? उनके भेदों को उदाहरण सहित समझाइए।

किन्हीं तीन प्रश्नों के उत्तर दीजिए। उत्तर विस्तार से हो।

16. (a) कहानी कला के तत्वों के आधार पर 'उसने कहा था' कहानी का सारांश लिखिए।

(या)

- (b) 'निर्मला' का चरित्र-चित्रण कीजिए।

17. (a) 'निर्मला' उपन्यास में चित्रित सामाजिक समस्याओं पर विचार कीजिए।

(या)

- (b) सर्वनाम किसे कहते हैं? उनके भेदों को उदाहरण सहित समझाइए।

18. (a) अंग्रेज़ी में अनुवाद कीजिए।

अक्सर लड़के अपने से बड़ों की नकल करते हैं। बचपन में लड़के अधिक समय माता-पिता के पास रहते हैं। इसलिए वे उनकी अच्छाइयों और बुराइयों का अनुकरण करने लगते हैं। यह मानी हुई बात है कि अच्छाई की अपेक्षा बुराई का अनुकरण लोग आसानी से करते हैं। जो बात बचपन से लड़के सीख लेते हैं, आगे चलकर वही आदत बन जाती है। इसलिए जो अपने बाल-बच्चों का चरित्र बिगाड़ना नहीं चाहते, उनको चाहिए कि वे खुद भी अच्छा आचरण करें। शिक्षा का असली उद्देश्य चरित्र का निर्माण ही है।

(या)

- (b) कृष्णा का चरित्र-चित्रण कीजिए।

C-5667

Sub. Code

11T

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

First Year / First Semester

Part – I

தமிழ்ச்செம்மொழியும் தமிழர்களின் பன்முகத்திறனும்

(Common for all U.G. Degree Courses)

(2016 to 2018 onwards)

Duration : 3 Hours

Maximum : 75 Marks

பகுதி அ

(10 × 2 = 20)

அனைத்து வினாக்களுக்கும் விடையளிக்கவும்.

1. ஓட்டுநிலை மொழி என்றால் என்ன?
2. தமிழின் செம்மொழித் தகுதிகளைச் சான்றுகளுடன் எடுத்துக் காட்டி விளக்கியவர் யார்?
3. செம்மொழி தகுதிபெற்றக் காப்பியங்கள் கூறுக.
4. தழை ஆடை என்பதென்ன?
5. கழல் என்னும் அணிகலன் பண்டைகாலத்தில் இருந்தமைக்கு இலக்கியச் சான்று ஒன்று காட்டுக.
6. குகை காவியங்கள் பற்றிக் குறிப்புரைக்க.
7. களிமண் சிற்பங்கள் பற்றிக் கூறுக.
8. பண்டைக் காலத்தில் காணப்பட்ட வாணிபப் போக்குவரத்து முறைகள் இரண்டினைக் கூட்டுக.
9. மருந்துகளால் பெயர்பெற்ற இரண்டு அறநூல்கள் தருக.
10. விருந்தோம்பல் குறித்த வள்ளுவரின் சிந்தனை ஒன்றைத் தருக.

அனைத்து வினாக்களுக்கும் விடை தருக.

11. (அ) இந்தியச் செம்மொழிகள் பற்றி எடுத்துரைக்க.

(அல்லது)

(ஆ) தமிழ்ச் செம்மொழி இலக்கியங்கள் வரிசைப்படுத்தி அத்தகுதி பெற்றமைக்கானச் காரணங்களை சுருக்கி விளக்குக.

12. (அ) நடலாடை , பட்டாடைக் குறித்த இலக்கியப் பதிவுகளைத் தருக.

(அல்லது)

(ஆ) ஆடைக்கும் பண்பாட்டிற்கும் உள்ள தொடர்பு குறித்து எடுத்துரைக்க.

13. (அ) காப்பியங்கள் காணலாகும் அணிகலன்கள் பற்றிய பதிவுகளைத் தருக.

(அல்லது)

(ஆ) பெண்கள் அணியும் அணிகலன்களாக இலக்கியங்கள் வழி அறியப்படுவனவற்றைச் சான்றுடன் தருக.

14. (அ) இலக்கியங்கள் வழி அறியலாகும் சிற்பக்கலை குறித்து எடுத்துரைக்க.

(அல்லது)

(ஆ) கட்டடக்கலைக்கும் காப்பியங்கள் சான்றுகளை எடுத்துரைக்க.

15. (அ) பண்டை இலக்கியங்கள் வழி அறியப்படும் மருத்துவக் குறிப்புகளைத் தருக.

(அல்லது)

- (ஆ) பண்டைத் தமிழ் மக்கள் போற்றிய விருந்தோம்பலை விரித்துரைக்க.

பகுதி இ

(3 × 10 = 30)

அனைத்து வினாக்களுக்கும் விடை தருக.

16. (அ) தமிழின் சிறப்புகளையும், அதன் இலக்கிய வளமை குறித்தும் கட்டுரை வரைக.

(அல்லது)

- (ஆ) தமிழ்ச் செம்மொழி நூல்களின் தனித்தன்மைகளை விளக்கி ஆராய்க.

17. (அ) ஆடை வகைகளை இலக்கியச் சான்று காட்டி விரித்துரைக்க.

(அல்லது)

- (ஆ) தமிழர்களின் அணிகலன் பயன்பாடு குறித்துக் கட்டுரைக்க.

18. (அ) இசைக்கலை குறித்துச் செம்மொழிச் இலக்கியக் பதிவுகள் சான்றுடன் விளக்கியுரைக்க.

(அல்லது)

- (ஆ) இலக்கியங்கள் வழி அறியலாகும் பண்பாடு பழக்க வழக்கங்கள் பற்றிக் கட்டுரை வரைக.

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-5672

Sub. Code

21F

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

Second Year — Second Semester

Part 1 — 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. Que savez-vous du français ?
2. Trouvez les réponses :
 - (a) Comment tu t'appelles ? _____
 - (b) Comment allez-vous ? _____
3. Dites les nombres :
 - (a) les filles dans la classe : _____
 - (b) les garçons dans la classe : _____
4. C'est quoi les accents ?
5. Quels sont les trois types d'accents ?
6. C'est quoi les articles ?
7. Types d'articles ?

8. Types de pronoms.
9. La monnaie de la France est :
10. Le drapeau français est :

Part B

(5 × 5 = 25)

Answer **all** questions.

11. Donnez les mots français :

- (a) (i) Hello :
- (ii) Good Morning :
- (iii) Good Evening :
- (iv) Fine Thank You :
- (v) How are you ? :

Ou

- (b) (i) See You Tomorrow :
- (ii) What is Your Name :
- (iii) Good Afternoon :
- (iv) Excuse Me :
- (v) Madam :

12. Ecrivez les nombres suivants en chiffres :

(a) (i) seize :

(ii) dix-neuf :

(iii) douze :

(iv) neuf :

(v) treize :

Ou

(b) (i) cinq :

(ii) quinze :

(iii) vingt :

(iv) onze :

(v) quatre :

13. Ecrivez les nombres en lettres :

(a) (i) 39 -

(ii) 46 -

(iii) 41 -

(iv) 64 -

(v) 25 -

Ou

- (b) (i) 62 -
- (ii) 70 -
- (iii) 53 -
- (iv) 48 -
- (v) 37 -

14. Ecrivez le nom des couleurs en français :

- (a) (i) Black :
- (ii) White :
- (iii) Rose :
- (iv) Blue :
- (v) Grey :

Ou

- (b) (i) Green
- (ii) Yellow
- (iii) Violet
- (iv) Purple
- (v) Orange.

15. (a) Décrivez votre mère en 5-6 lignes.

Ou

(b) Décrivez votre famille.

Part C

(3 × 10 = 30)

Answer **all** questions.

16. Give the French Equivalent for the following countries.

- (a) (i) England →
- (ii) Africa →
- (iii) America →
- (iv) China →
- (v) Egypt →
- (vi) Iran →
- (vii) India →
- (viii) France →
- (ix) Italy →
- (x) Rome

Or

- (b) (i) Dubai →
- (ii) Muscut →
- (iii) Norway →
- (iv) Switzerland →
- (v) Mascow →
- (vi) Singapore →
- (vii) Spain →
- (viii) London →
- (ix) Paris →
- (x) Japan →

17. (a) Ecrivez dix noms de Legumes en Français.

Ou

(b) Ecrivez n'importe quel nom de dix fruits en Français.

18. (a) Presentez - vous en français.

Ou

(b) Décrire une station de montagne en français.

C-5673

Sub. Code

21H

U.G. DEGREE EXAMINATION, APRIL 2022

Second Year – Second Semester

Part I – Hindi

HINDI II – PROSE, GRAMMAR AND TRANSLATION – II

(Common for all UG Degree courses)

(2016/2018 onwards)

Duration : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

सभी प्रश्नों के उत्तर संक्षेप में लिखिए।

1. वैज्ञानिक युग में भारत का दायित्व क्या है?
2. घृणा और भय में क्या सम्बन्ध है?
3. रजिया ने लेखक को पहली मुलाकात में क्यों प्रभावित किया?
4. मक्रील के वातावरण पर प्रकाश डालिए।
5. भ्रमण के लिए नक्शे से क्या मदद मिलती है?
6. राष्ट्रपिता महात्मा गाँधी पाठ का लेखक कौन है और यह पाठ किस विधा की रचना है?
7. किसी विदेशी को भारत अनेक देशों का समूह क्यों प्रतीत होता है?
8. घृणा का समाज में क्या महत्व है?

9. लेखक ने रजिया को अन्तिम बार किस रूप में देखा?
10. 'बहता पानी निर्मला पाठ का निष्कर्ष क्या है'?

Part B

(5 × 5 = 25)

सभी प्रश्नों के उत्तर दीजिए।

संदर्भ सहित व्याख्या कीजिए।

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

(या)

- (b) जिस वस्तु का जीवन में इतना मूल्य है, उसे शिथिल होने देना, अपने पाँव में कुल्हाड़ी मारना है।

12. (a) फिर जरा-सा रुककर बोली-सुना था, आप यहीं रहते हैं। कहाँ रहते हैं मालिक? मैं तो अकसर आया करती हूँ।

(या)

- (b) मेरे सुख को बाँटनेवाला कोई नहीं, इसलिए वह विकास न या, तीव्र दाह बन जाता है।

13. (a) "जनाब, अपना बोरिया-विस्तर समेटिए और जरा चलते-फिरते नजर आइये"। यह आपका अपमान नहीं है।

(या)

- (b) जहाँ स्त्रियों को वही अधिकार है जो पुरुषों को, यह मेरे स्वप्नों का भारत है।

व्याकरण :

14. (a) 'ने' विधि का प्रयोग समझाइए।
(या)
(b) वर्तमानकाल के भेदों को उदाहरण सहित समझाइए।
15. (a) भूतकाल के भेदों को उदाहरण सहित समझाइए।
(या)
(b) भविष्यत्काल के भेदों को उदाहरण सहित समझाइए।

Part C

(3 × 10 = 30)

किन्हीं तीन प्रश्नों का उत्तर दीजिए।

उत्तर विस्तार से हो।

16. (a) 'भारतीय संस्कृति' पाठ का सारांश लिखिए।
(या)
(b) 'बहता पानी निर्मला' पाठ का सारांश लिखिए।
17. (a) क्रिया विशेषण किस 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. (a) हिन्दी में अनुवाद कीजिए।

One day Prince Siddhartha was playing in the palace-garden. He saw some wild swans flying in the sky. He loved these fine birds very much. Suddenly one of the swans dropped down from the sky and fell at his feet. There was an arrow in its side. Blood was coming out of its body. The prince felt very unhappy. He took the arrow out of the bird gently. He put some green leaves on the wounded part.

(या)

(b) King Dasaratha had three queens, Kausalya, Kaikeyi and Sumithra. Rama was the son of the eldest queen Kausalya, Bharata was the son of Kaikeyi; while Sumitra had two sons, Lakshmana and Sathrughna. Lakshmana was devoted to Rama and was always in his company; while Sathrughna was specially devoted to Bharatha. The four brothers lived in great friendship, and the three younger brothers worshipped their eldest brother Rama.

C-5671

Sub. Code

21T

Common for B.Sc./B.B.A DEGREE EXAMINATION,
APRIL2022

Second Year / Second Semester

Common for all U.G. Degree Course

Part – I இலக்கணமும், படைப்பிலக்கியமும்

(2016-2018 onwards)

Duration : 3 Hours

Maximum : 75 Marks

பகுதி அ

ஒரிரு வரிகளில் விடை தருக.

(10 × 2 = 20)

1. மெய்யெழுத்துக்களின் வகைகளைக் கூறுக.
2. உடம்படுமெய் என்றால் என்ன?
3. மு.மேத்தா எதன்மூலம் எதையும் அடைந்துவிட முடியும் என்கிறார்?
4. வைரமுத்துவின் விதைச்சோளம் கவிதையின் அடிநாதமாக விளங்குவது யாது?
5. அசோகமித்ரன் 'பள்ளியில் ஒரு நாய்க்குட்டி' எனச் சுட்டுவது யாது?
6. 'தந்தை மகனுக்கு ஆற்றும் நன்றி' என்னும் சிறுகதையின் கரு யாது?
7. இணைய முகவரி என்றால் என்ன?
8. இணைய இதழ்கள் இரண்டின் பெயர்களைச் சுட்டுக.
9. புதுக்கவிதை உத்திகளுள் இரண்டினைக் கூறுக.
10. தமிழ்ச் சிறுகதைகளின் முன்னோடி எது? அதனை எழுதியவர் யார்?

ஒரு பக்க அளவில் விடை தருக.

11. (அ) மொழி முதலெழுத்துக்களை எழுதுக.

(அல்லது)

(ஆ) சார்பெழுத்துக்களின் வகைகளைக் கூறுக.

12. (அ) புத்தகசாலை நாட்டில் ஏற்படுத்தும் மாற்றங்களாகப் பாரதிதாசன் கூறுவனவற்றை விளக்குக.

(அல்லது)

(ஆ) மீராவின் கவிதை உத்திகைகள் 'சாகாதவானம்' கவிதை கொண்டெழுதுக.

13. (அ) புராணத்தைப் புதிய கண்ணோட்டத்தில் படைத்துக் காட்டும் புதுமைப்பித்தனின் போக்கை விளக்குக.

(அல்லது)

(ஆ) அர்ச்சனை ரூபாய் சிறுகதையில் கு.ப.ரா. வெளிப்படுத்தும் வாழ்வியல் உண்மையை எழுதுக.

14. (அ) மின்னஞ்சல் முகவரி உருவாக்கும் முறை குறித்தெழுதுக.

(அல்லது)

(ஆ) தமிழ் வளர்ச்சித் துறையின் இணையதளம் பற்றி எழுதுக.

15. (அ) மரபுக்கவிதை என்றால் என்ன? விளக்குக.

(அல்லது)

(ஆ) சிறுகதை வடிவம் குறித்தெழுதுக.

பகுதி இ

(3 × 10 = 30)

கட்டுரை வடிவில் விடை தருக.

16. (அ) மொழியிறுதி எழுத்துக்களை விவரி.

(அல்லது)

(ஆ) வல்லினம் மிகும் இடங்களைத் தொகுத்துரைக்க.

17. (அ) சிறுகதையின் தோற்றமும் வளர்ச்சியும் குறித்துக் கட்டுரைக்க.

(அல்லது)

(ஆ) மின்நூலகங்கள் தமிழ் வளர்க்கும் பாங்கை விவரி.

18. (அ) “மனிதநேயம் போற்றுவோம்” என்னும் தலைப்பில் கவிதை இயற்றுக.

(அல்லது)

(ஆ) சுற்றுச்சூழலைப் பேணுதல் என்னும் கருவை மையமிட்டு சிறுகதை படைத்தீடுக.

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-5675

Sub. Code

31

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

Third Semester

Part II — ENGLISH — COMMUNICATIVE 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. Mention two barriers to communication.
2. Give two examples for negative gestures.
3. What are homonyms? Give an example.
4. Replace the infinitives in the given sentences with gerunds:
 - (a) Bheema loves to eat.
 - (b) Sandhya's hobby is to make dolls.
5. Choose the right adjectives to fill in the blanks:
 - (a) There isn't _____ milk, left in the fridge. (much/many)
 - (b) Karkuzhazhi is a _____ girl. (handsome/beautiful)
6. Choose the right prepositions to fill in the blanks:
 - (a) The discussion was _____ politics.(on/ about)
 - (b) Isai is junior _____ Arun. (than/to)

7. What is primary stress?
8. What are the kinds of intonation?
9. What is SQ3R?
10. What is scanning?

Part B

(5 × 5 = 25)

Answer **all** questions.

11. (a) Write briefly on the ways of challenging the barriers of communication.

Or

- (b) Define communication and mention the types of communication.

12. (a) Distinguish between active voice and passive voice with examples.

Or

- (b) What are phrasal verbs and prepositional phrases? Give examples.

13. (a) Write briefly on unnecessary articles and prepositions with examples.

Or

- (b) Put the adverbs in the given sentences in the right position:

- (i) Jenny cries without sometimes a reason.
- (ii) Selvi comes often early to office.
- (iii) The lark sings in the morning happily.
- (iv) Do not forget regularly to take your medicines.
- (v) Dr. Salim Ali lovingly spoke to his students.

14. (a) Distinguish between primary and secondary stress with examples.

Or

- (b) Use appropriate intonation symbols for the given expressions.
- (i) Where do you live?
 - (ii) Thanks, my friend,
 - (iii) Are you happy?
 - (iv) What a beautiful picture!
 - (v) God is love.
15. (a) Write a paragraph on the characteristics of good handwriting.

Or

- (b) Write briefly on the mechanics of hand-writing.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Write in detail on the kinds of verbal and non-verbal communication.

Or

- (b) Frame questions to suit the following responses:

- (i) There are twenty- nine states in India
- (ii) May is the hottest month in our country.
- (iii) I would like to have some coffee.
- (iv) Raji is my friend.
- (v) Kodai is my favourite tourist location.
- (vi) My mother is a doctor.
- (vii) This chair costs Rs. 500.

- (viii) Rithika works in a dance school.
- (ix) Ameer's father is a famous poet.
- (x) The Quran is the holy book of the Muslims.

17. (a) Identify the sentences as simple, compound and complex:

- (i) I believe that God exists.
- (ii) Seeing the snake, Ravi shouted.
- (iii) Tell me the truth and you won't be punished.
- (iv) He worked, while I sang.
- (v) When Shree came in, Gautam was playing the piano.
- (vi) Pravin and Valli are working on a new project.
- (vii) The bird cannot fly unless it has wings.
- (viii) Rahul loves dancing, therefore he has joined a dance school.
- (ix) Nikil hates garlic, but his mother forces him to eat it.
- (x) Being slim and agile, Krishil climbs the mango tree easily.

Or

(b) How are nouns, verbs, adjectives and adverbs often confused? Explain in detail and give examples.

18. (a) Write an essay on 'the importance of reading'.

Or

(b) Write in detail on vowel and consonant sounds.

C-5676

Sub. Code

41

**COMMON FOR ALL U.G. DEGREE COURSES
B.Sc./B.B.A. DEGREE EXAMINATION, APRIL 2022**

Fourth Semester

EMPLOYABILITY SKILLS

(2016 to 2018)

Duration : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. What is meant by telephone etiquettes?
2. What are the different types of interview?
3. Mention few techniques for formal letter writing.
4. What are the key elements for writing resume?
5. Why do we great people / others?
6. What is meant by review writing?
7. What are the different types of composition?
8. How do we develop our creative competency?
9. What is meant by non-verbal communication?
10. How does personal appearance help non – verbal communication?

Part B

(5 × 5 = 25)

Answer **all** questions.

11. (a) What are the different ways to express our opinions?

Or

- (b) Write a short note on techniques of interview.

12. (a) Describe the steps to be followed while filling a bank challan.

Or

- (b) What are the steps to be followed to write a resume?

13. (a) What are the different types of greetings? Write short note on it.

Or

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

14. (a) Write a paragraph on controlled composition.

Or

- (b) Write a note on different steps to develop creative competency.

15. (a) Write a short note on different types of non-verbal communication.

Or

- (b) What are the uses of visual aids?

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) Describe in detail on interview skills and its techniques.

Or

- (b) Write a letter to your father about your health issues at the hostel

17. (a) Write a short note on the following

- (i) Note-making.
(ii) Note-taking.

Or

- (b) Prepare a report of your annual project.

18. (a) Write an essay on different kinds of composition.

Or

- (b) Write an essay on merits and demerits of visual aids.
-

C-5741

Sub. Code

11613

B.Sc. DEGREE EXAMINATION, APRIL 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. Find $\vec{a} \cdot \vec{b}$ if $\vec{a} = 5\vec{i} - 2\vec{j} + 3\vec{k}$ and $\vec{b} = \vec{i} - 3\vec{j} + 4\vec{k}$.
2. What are the measures of central tendency?
3. Write general equation of ellipse and hyperbola.
4. Find centre and radius of the circle $x^2 + y^2 - 14x + 6y + 9 = 0$.
5. State Napier's rule for a right-angled triangle.
6. What are the properties of spherical triangle?
7. Find the derivative of $y = 7x^3 + 4x^2 - 3x + 2$.

8. Define integration by parts.
9. State Cayley Hamilton Theorem.
10. Find eigen value of $A = \begin{bmatrix} 4 & 1 \\ 3 & 2 \end{bmatrix}$.

Part B

(5 × 5 = 25)

Answer **all** questions.

11. (a) State and prove Baye's Theorem.

Or

- (b) An urn contains 4 white balls and 7 black balls. If 6 balls drawn from the urn find the probability that among them there will be exactly 2 white balls and 4 black balls.

12. (a) Evaluate $\int_0^1 \frac{dx}{1+x^2}$ by using Simpson's rule by using 6 intervals.

Or

- (b) Find the area and volume of sphere and cylinder.

13. (a) In an equilateral spherical triangle ABC, prove that $\cos \frac{1}{2} \alpha, \sin \frac{1}{2} \alpha = \frac{1}{2}$.

Or

- (b) In a spherical triangle ABC if angle $B = e$, show that $\sin(A - \alpha) = \sin \alpha \sin A \cos B \cot B$.

14. (a) If $y = a \cos(\log x) + b \sin(\log x)$, show that

$$x^2 \frac{d^2 y}{dx^2} + x \frac{dy}{dx} + y = 0.$$

Or

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

15. (a) Find the rank of $\begin{bmatrix} 4 & -5 & 1 & 2 \\ 3 & 1 & -2 & 9 \\ 1 & 4 & 1 & 5 \end{bmatrix}$.

Or

(b) Find the eigen value of $\begin{bmatrix} 9 & 5 & 3 & 8 \\ 0 & 4 & 4 & 2 \\ 0 & 0 & 2 & 5 \end{bmatrix}$.

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) Find mean, median and mode for the following :

| | | | | | | | | | |
|-----|------|-------|-------|-------|-------|-------|-------|-------|-------|
| x | 0-10 | 10-20 | 20-30 | 30-40 | 40-50 | 50-60 | 60-70 | 70-80 | 80-90 |
| f | 10 | 10 | 10 | 35 | 20 | 20 | 25 | 25 | 15 |

Or

(b) Given $a = 36^\circ 28'$, $b = 109^\circ 15'$, $c = 20^\circ$, solve the triangle.

17. (a) Find the equation of the sphere having the circle
 $x^2 + y^2 + z^2 - 2x + 4y - 6z + 7 = 0$, $2x - y + 2z = 5$ for a
great circle.

Or

- (b) Evaluate : $\int \frac{2x+3}{(1-x^2)(1+3x)} dx$.

18. (a) Verify Cayley Hamilton theorem $A = \begin{bmatrix} 1 & 0 & 3 \\ 2 & 1 & -1 \\ 1 & -1 & 1 \end{bmatrix}$.

Or

- (b) Reduce the quadratic form.

$3x_1^2 - 3x_2^2 - 5x_3^2 - 2x_1x_2 - 6x_2x_3 - 6x_3x_1$ to canonical
form.

C-5742

Sub. Code

11614

B.Sc. DEGREE EXAMINATION, APRIL 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. Describe planetary motion.
2. What are Transformers?
3. What is Solenoid?
4. State the use of Marine hydrometer.
5. State the use of Optical pyrometer.
6. What is luminous intensity?
7. When do we use Astronomical Telescope?
8. Define Semiconductors.
9. What are rectifiers?
10. Describe VOR.

Part B

(5 × 5 = 25)

Answer **all** questions.

11. (a) Describe Einstein's equation in detail.

Or

- (b) Explain the simple electric circuits with neat diagrams.

12. (a) Write short notes on EMS and Peak values.

Or

- (b) Discuss the Hysteresis and magnetic elements of the earth.

13. (a) Explain the streamline flow and turbulent flow in detail.

Or

- (b) Define Bernoulli's equation and its application.

14. (a) What are photometers? Describe their uses.

Or

- (b) Give the application of Optical pyrometer and Astronomical telescope.

15. (a) What is RADAR? state the limitations of Radar.

Or

- (b) Explain the term Photometers and Photovoltaic cell.

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) Discuss the co-planer forces acting on a rigid body.

Or

- (b) State the uses, characteristics, care and maintenances of batteries.

17. (a) With an aid of neat diagram explain the working principle of Sextant.

Or

- (b) Explain the Photoelectric effect with neat diagram.

18. (a) Discuss in detail about Weston differential pulley and Hydrograph.

Or

- (b) Explain the construction and characteristics of Transistors.
-

C-5743

Sub. Code

11615

B.Sc. DEGREE EXAMINATION, APRIL 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. What is the purpose of Deep tanks?
2. How will you prevent rolling of ship?
3. Describe Heel.
4. What is TPC?
5. How will you calculate the Air draught?
6. Define Prismatic coefficient.
7. What is the effect of adding masses on upper deck?
8. What is the effect of large righting lever on ship's stability?
9. Where will be the position of Centre of Gravity of a hanging mass on board?
10. Define LBP.

Part B

(5 × 5 = 25)

Answer **all** questions.

11. (a) Explain the Fore peak arrangement on General Cargo ship.

Or

- (b) Describe Load line marking with neat sketch.

12. (a) Draw the Engine room layout of Tanker ship.

Or

- (b) What are combination carriers? Give few examples.

13. (a) What is Duct keel? Explain with neat diagram.

Or

- (b) A vessel's Block coefficient is 0.7, Mid-ship coefficient is 0.89. Calculate Prismatic co-efficient.

14. (a) If a ship's beam is 39m and draught 10m, what would be the increase in draught at a list of 3°.

Or

- (b) Describe the structural strengthening members of the ship.

15. (a) Distinguish between Stiff and Tender conditions of ship.

Or

- (b) What is the effect of Metacentre over ship's stability condition?

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) With neat diagrams explain the general layout arrangement of LNG Ship.

Or

- (b) A ship of 8500 t displacement has $KG = 5.1$ m, $KB = 3.1$ m, $KM = 6.9$ m. Find moment of statical stability when she heels 12° , assuming that she is wall sided.

17. (a) Write short notes on:

- (i) Mean draught.
- (ii) Camber
- (iii) MCT 1 CM
- (iv) Metacentric height
- (v) Loll condition of ship.

Or

- (b) A ship of 145 m × 18 m × 11 m has the Block coefficient of 0.8 and floating at summer load draught of 7.5 m in FW. Find how much more cargo can be loaded to remain at the same draught in salt water.

18. (a) What is free surface effect? Explain in detail with neat Sketches.

Or

- (b) Distinguish the difference between Stable and Unstable conditions of ship with neat diagram.

C-5744

Sub. Code

11616

B.Sc. DEGREE EXAMINATION, APRIL 2022

First Semester

Nautical Science

SHIP OPERATION TECHNOLOGY — I

(2016 onwards)

Duration : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. What is Forecastle deck?
2. What is Holiday in paint?
3. What is the use of MONKEY FIST in a heaving line?
4. What is boat and fire drill?
5. Write down the markings on a Life boat.
6. Write down the navigation watch timings on board?
7. What is a TPA and its use?
8. What is SCBA and its use on board ship?
9. What is SWL and where will you find it?
10. What is the use of fiber heart of a wire rope?

Part B

(5 × 5 = 25)

Answer **all** questions.

11. (a) Box the compass from SOUTH TO EAST.

Or

- (b) Briefly explain the preparation of a surface for painting on board ships.

12. (a) Write short notes on Fire Man's outfit and its usage.

Or

- (b) What are the different types of Life boats? Briefly explain each.

13. (a) What are the requirements of an Emergency fire pump?

Or

- (b) Explain the refilling procedure of water type fire extinguisher.

14. (a) Write short notes on the following.

(i) Life jacket

(ii) Immersion Suit

Or

- (b) Write down all life raft equipments.

15. (a) Explain the procedure for inflating a L/raft?

Or

(b) Write down the difference between natural fiber rope and synthetic fiber rope.

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) (i) What are different types of paints?
(ii) What are painting defects and how the same can be prevented?

Or

(b) (i) Name the boat station, fire station and man over board alarms.
(ii) What are the markings on a Life boat?
(iii) Draw an open life boat and label its parts.

17. (a) Explain on load release mechanism of a fully enclosed Life boat and explain how will you launch it on the water?

Or

(b) Explain how Foam smothering system works on board a tanker.

18. (a) Write different types of knots, hitches, whipping and its uses.

Or

(b) Explain fixed fire fighting system (CO₂) with a neat diagram.

C-5745

Sub. Code

11623

B.Sc. DEGREE EXAMINATION, APRIL 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. Find the absolute value of $\frac{(1+3i)(1-2i)}{3+4i}$
2. Find the real and imaginary parts of $\sin(x-iy)$.
3. Write the error of the trapezoidal rule.
4. What is the order of error in the simpson's 1/3 rule?
5. Define solenoidal vector.
6. If $\Delta\phi$ is solenoidal, then find $\nabla^2\phi$.
7. Form the differential, equation $y^2 = 4a(x-a)$
8. Solve $x\sqrt{1+y^2} + y\sqrt{1+x^2} dy/dx = 0$
9. Solve $(D^3 - 1)y = 0$
10. Write down the second order linear differential operator.

Part B

(5 × 5 = 25)

Answer **all** questions.

11. (a) Discuss the geometric representation of z_1, z_2

Or

- (b) Derive the arc $\cos w = \pm i \log \left(w + \sqrt{w^2 - 1} \right)$

12. (a) Find $f'(3)$ and $f''(3)$ for the following data

| | | | | | | |
|----|---|---|----|---|---|---|
| x: | 0 | 1 | 2 | 3 | 4 | 5 |
| y: | 4 | 8 | 15 | 7 | 6 | 2 |

Or

- (b) Evaluate $\int_{1/2}^1 \frac{1}{x} dx$ by trapezoidal rule, dividing the range into 4 equal parts.

13. (a) Evaluate $\int_c [x^2 y dx + (x - z) dy + xyz dz]$ where C is the arc of the parabola $y = x^2$ in the plane $z = 2$ from $(0, 0, 2)$ to $(1, 1, 2)$.

Or

- (b) Show that $\vec{F} = (y^2 + 2xz^2)\vec{i} + (2xy - z)\vec{j} + (2x^2z - y + 2z)\vec{k}$ is irrotational and hence find its scalar potential.

14. (a) Solve $\frac{dy}{dx} = 1 + x + y + xy$

Or

- (b) Solve $\frac{dy}{dx} + y \cot x = 2 \cos x$

15. (a) Solve $(D^2 - 8D + 9)y = 8\sin 5x$

Or

(b) Solve $(D^2 - 1)y = 2 + 5x$

Part C

(3 × 10 = 30)

Answer all questions.

16. (a) If $\sin(A + iB) = x + iy$, prove that

$$\frac{x^2}{\cosh^2 B} + \frac{y^2}{\sinh^2 B} = 1$$

Or

(b) State and prove Demoivre's theorem.

17. (a) Using stoke's theorem, evaluate $\int_c \vec{F} \cdot d\vec{r}$ where

$$\vec{F} = y^2 \vec{i} + x^2 \vec{j} - (x+z) \vec{k}$$

and c is the boundary of the triangle with vertices at (0,0,0), (1,0,0), (1,1,0).

Or

(b) Using Simpson's one third rule evaluate $\int_0^1 xe^x dx$ taking 4 intervals. Compare your result with actual value.

18. (a) (i) Solve $(x+y)^2 \frac{dy}{dx} = a^2$

(ii) Solve $xdy = (y + 4x^5 \cdot e^{x^4}) dx$

Or

(b) Solve $(D^3 - 7D - 6)y = e^{2x} (1+x)$

C-5746

Sub. Code

11624

B.Sc. DEGREE EXAMINATION, APRIL 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. State the basic principle of nuclear reactor.
2. What is LCR circuit?
3. Define Electric Resonance in LCR circuit.
4. State the Various Regions of electromagnetic Spectrum.
5. Give the truth table for OR GATE.
6. Draw the Logical diagram for Half adder.
7. Define current Gain.
8. Distinguish power amplifier and voltage amplifier.
9. What do you mean by modulation?
10. What are the types of modulation?

Part B

(5 × 5 = 25)

Answer **all** the questions.

11. (a) How the waste Hazards can be detected in nuclear reactor?

Or

- (b) Explain Electrostatic charging of oil in pipeline flow.

12. (a) Explain the applications of electrical resonance in radio communication.

Or

- (b) Write short note on MUF and critical frequency.

13. (a) Draw the logical diagram for Full adder and explain.

Or

- (b) Explain How NAND GATE can be converted in to OR GATE and AND GATE.

14. (a) Explain the working JK flip flop.

Or

- (b) Draw the characteristics of NPN Transistor in CE mode.

15. (a) Describe the functions of transmitters.

Or

- (b) Explain how the signal waves are transmitted with the help of modulated carrier wave.

Part C

(3 × 10 = 30)

Answer **all** the questions.

16. (a) Explain the construction and working of Nuclear Reactor.

Or

- (b) Describe the Radiation Pattern of Marconi Antenna.

17. (a) Explain the working of Bistate multivibrator.

Or

- (b) State and prove de-morgans theorem.

18. (a) Explain the characteristics of radio receivers.

Or

- (b) Explain the working of superhetrodyne receivers.
-

C – 5747

Sub. Code

11625

B.Sc. DEGREE EXAMINATION, APRIL 2022

Second Semester

Nautical Science

SHIP OPERATION TECHNOLOGY – II

(2016 onwards)

Duration : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. What are the uses of anchors?
2. Define anchor aweigh and Bitter end
3. What are the uses of MOB marker?
4. List the pyrotechnics kept in the bridge.
5. What different fire detectors are fitted onboard?
6. Why is risk assessment necessary?
7. Define manouevering.
8. Draw fire triangle and fire tetrahedron.
9. What is the use of anchor buoy?
10. When is Williamson's turn used?

Part B

(5 × 5 = 25)

Answer **all** questions.

11. (a) How to anchor to cock bill position and why is it necessary?

Or

- (b) What is the difference between cable up and down and anchor up and down (draw diagram).

12. (a) How to lower a Davit launched Life Boat?

Or

- (b) How to prepare to abandon ship?

13. (a) What is SWP and why is it necessary?

Or

- (b) What safety precautions are taken prior to enclosed space?

14. (a) How does a sprinkler system work?

Or

- (b) Write in sequence the steps involved in opening CO₂ in engine room.

15. (a) (i) Tackle diameter (ii) Head reach
(iii) Dead Weight

Or

- (b) How to care for pilot adder?

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) How to prepare anchor for letting go?

Or

(b) How to secure anchor for sea?

17. (a) How to manually lower a life raft?

Or

(b) What are different types of alarms and here are the operating switches fitted?

18. (a) What different characters of the ship and the weather elements should be understood for good ship handling?

Or

(b) Explain with diagram the different manouevers recommended to rescue a man overboard.

C-5748

Sub. Code

11626

B.Sc. DEGREE EXAMINATION, APRIL 2022

Second Semester

Nautical Science

NAVIGATION – I

(2016 onwards)

Duration : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. What is “Knot”?
2. What is Rhumb line?
3. Express ‘Equator’.
4. What is “Graduation error” in sextant?
5. Name any two Navigational system.
6. Which instrument is used for measuring the angles of celestial bodies?
7. Define the term variation.
8. What is DR position?
9. Define the term DIP.
10. What is the use of “Azimuth mirror”?

Part B

(5 × 5 = 25)

Answer **all** questions.

11. (a) What are advantages and disadvantages of Mercator charts.

Or

- (b) Describe Greenwich meridian.

12. (a) Draw boxing of Compass and mark cardinal points.

Or

- (b) Explain parallel sailing and Middle latitude sailing.

13. (a) Find the gyro error and fill the gyro compass error & name them.

| | 1 | 2 | 3 |
|--------|---------|---------|---------|
| Rtg(T) | 280°(T) | 128°(T) | 044°(T) |
| Rtg(G) | 278°(G) | 126°(G) | 044°(G) |

Or

- (b) Discuss the process of obtaining the position of the ship at any time.

14. (a) Find the magnetic bearing and fill the following table :

| | | | |
|--------|---------|---------|---------|
| Brg(T) | 278°(T) | 149°(T) | 005°(T) |
| Var | 15°E | 12°W | 0.5°E |
| Brg(M) | - | - | - |

Or

- (b) Explain the procedure for correcting deviation of Magnetic compass.

15. (a) Explain the procedures for finding the errors by radio signals.

Or

- (b) Find the course and distance from

Position A: Lat $42^{\circ}14'N$ Long: $088^{\circ}36'E$

to Position B: Lat $41^{\circ}24'N$ Long: $095^{\circ}42'E$

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) Draw a figure of celestial sphere on the plane of the rational horizon for an observer in lat. $30^{\circ}N$ (use radius = 4.5 cm). Indicate the following in the figure:

(i) Position of Aries when its LHA = 50°

(ii) Position of star with Decl. $15^{\circ}S$ & SHA = 270°

Or

- (b) Discuss the principles of Mercator's projection.

17. (a) Find the course and distance from the following :

Position A : $04^{\circ}S$ $177^{\circ}37'W$

Position B : $02^{\circ}29'SN$ $179^{\circ}24'E$ (plane sailing)

Or

- (b) Find the position arrived from the given information :

Position left : $34^{\circ}40'N$ $092^{\circ}35'W$

Course : $241^{\circ}(T)$ distance : 1852 M (Mercator)

18. (a) Find the course and distance from the Mercator sailing

From : $26^{\circ}00'N$ $078^{\circ}15'W$

To : $40^{\circ}00'N$ $056^{\circ}25'W$

Or

(b) Find the course and distance using TT

A : $20^{\circ}30'N$ $175^{\circ}15.0'E$

B : $18^{\circ}16'N$ $165^{\circ}25.0'W$

C – 5749

Sub. Code

11632

B.Sc. DEGREE EXAMINATION, APRIL 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.

Draw diagrams wherever applicable.

1. Briefly explain about a General cargo ship.
2. Briefly explain about a container vessel.
3. Define Bale Capacity and Grain capacity.
4. Define Stowage factor.
5. Define Load Density.
6. What is use of load line with reference to Cargo work?
7. What is the use of preventer guy in a derrick?
8. What is the use of cellular guides in a container ship?
9. What is “Ship’s Sweat”?
10. What are frozen cargoes?

Part B

(5 × 5 = 25)

Answer **all** questions.

11. (a) Explain how do you load grain cargo by using conveyor belt.

Or

- (b) Importance of Cargo care for economical operation of ship — support this statement.

12. (a) How will you carry out ballasting and de ballasting operations? Briefly explain.

Or

- (b) How will you monitor the temperature of bulk cargo loaded in hold, while sailing? How do you make log entry for the same?

13. (a) Brief explain: (i) Ro-Ro ships (ii) Heavy lift ships.

Or

- (b) Briefly describe about the following cargoes:
(i) Reefer Cargoes
(ii) Dangerous Goods.

14. (a) How do you carry out segregation of cargoes?

Or

- (b) What is the need of ventilation of cargo spaces in a general cargo ship?

15. (a) What are the contents and use of rigging plan?

Or

(b) Define: (i) Measurement cargo (ii) Factor of safety (iii) Proof load.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Explain in detail how will you carry out cargo watch in a tanker?

Or

(b) You have loaded steel cargo from Europe in winter. What kind of cargo care you will take while sailing towards tropical country?

17. (a) Explain in detail about the preparation of a hatch for loading grain cargo.

Or

(b) Draw a simple derrick and label its parts.

18. (a) What are the operational checks you will carry out on cargo gear prior handing over to stevedores for discharge of cargo?

Or

(b) What are various types of deck cargoes? How do you secure these cargoes?

C-5750

Sub. Code

11633

B.Sc. DEGREE EXAMINATION, APRIL 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 such 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.

C-5751

Sub. Code

11634

B.Sc. DEGREE EXAMINATION, APRIL 2022.

Third Semester

Nautical Science

**VOYAGE PLANNING AND COLLISION
PREVENTION – I**

(2016 onwards)

Duration : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. What is Natural Scale?
2. What do you mean L.A.T.?
3. What would you say a safe speed was in RV?
4. What is the use of sector lights?
5. What is BA 5011?
6. What is NTM?
7. What is the difference between a Mercator chart and a Gnomonic Chart?
8. What is Variation and from where do you obtain it?
9. What is EP position?
10. What do mean by a vessel restricted in her ability to manoeuvre?

Part B

(5 × 5 = 25)

Answer **all** questions.

11. (a) Name all the rule of Part B of the ROR and state in what conditions do they apply?

Or

- (b) State Rule 6 of the COLREGS.

12. (a) What do you understand by “Chart projection”? Briefly explain various types of chart projections.

Or

- (b) What is a Gnomonic Chart? State its advantages and disadvantages.

13. (a) What are the methods to update a navigational chart on-board a ship?

Or

- (b) Explain charted height and drying height with the help of a diagram.

14. (a) Briefly explain the duties of a stand on vessel.

Or

- (b) State and explain Rule 2 of ROR.

15. (a) Define :

- (i) Underway
- (ii) Restricted Visibility
- (iii) WIG craft
- (iv) Vessel
- (v) Sailing vessel

Or

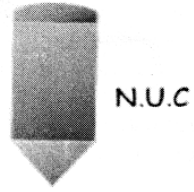
- (b) What factors are to be kept in mind while taking action to avoid collision?

Part C

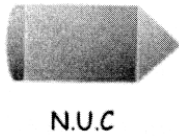
(3 × 10 = 30)

Answer **all** questions.

16. (a) State what action will you take in the following situations, according to which rule of the ROR.



Situation 1



Situation 2

Or

- (b) What is the essence of Quote Rule 18 of COLREGS?

17. (a) Define :
- (i) Vessel engaged in fishing
 - (ii) NUC V/L
 - (iii) RAM V/L
 - (iv) CBD V/L
 - (v) Look out

Or

- (b) Explain the conduct of vessels in a Narrow Channel.

18. (a) Briefly explain the conduct of vessels in RV.

Or

- (b) What is the advice given by Rule 10 of ROR.
-

C – 5752

Sub. Code

11635

B.Sc. DEGREE EXAMINATION, APRIL 2022

Third Semester

Nautical Science

NAVAL ARCHITECTURE – II

(2016 onwards)

Duration : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. Describe Tensile testing of materials.
2. Distinguish between Forging and Casting.
3. What is Gutter strake?
4. What are Collision bulkheads?
5. How do the decks are numbered?
6. State Simpson's First rule.
7. Describe Bow doors.
8. Ballast tanks are used for what?
9. What is Stern tube?
10. Define Hawse pipe.

Part B

(5 × 5 = 25)

Answer **all** questions.

11. (a) Explain the Aft peak arrangement on General Cargo ship.

Or

- (b) Describe the arrangements of double bottom in passenger ship.

12. (a) With neat diagram describe the functions of Water tight bulkheads.

Or

- (b) State the purpose and construction of the Bige keel.

13. (a) What is Spurlin pipe? State their securing arrangements.

Or

- (b) With simple sketch explain the stern frame arrangements.

14. (a) A ship of 7000t displacement has KG 4.6m and KM=6.2m. Calculate the moment of statical stability when heeled to 4°.

Or

- (b) Describe the effect on draught due to loading unloading of cargoes on board.

15. (a) Distinguish between Stiff and Tender conditions of ship.

Or

- (b) State the effect of Metacentre over ship's stability condition.

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) Explain the various tests at the production and the building stages.

Or

- (b) A ship of 120 m long at the waterline has equidistantly spaced half ordinates commencing from forward as follows:

0 3.7 5.9 7.6 7.5 4.6 and 0.1 m respectively. Find the area of the waterplane and TPC at this draught.

17. (a) “MV HINDSHIP” in a river port in water of Relative density 1.013 has a displacement of 12500 t GM is 0.85 m. FSC is 0.078 m she loads 420 t of cargo kg 9.5 m; 158 t of water ballast is run into No. 1 DB tank. Find the final KG.

Or

- (b) Draw the neat sketch of a Balanced type Rudder and label its parts.

18. (a) What is Statical stability curve? Enlist the stability data that you can determine from this curve.

Or

- (b) Discuss briefly the piping and pumping out arrangements provided in Tanker ship with neat sketches.

C-5753

Sub. Code

11636

B.Sc. DEGREE EXAMINATION, APRIL 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 diagrams wherever applicable.

1. What is PMS?
2. What is a “Muster List”?
3. What are the duties of “COMMAND TEAM”?
4. What are the defects of painting?
5. What is an “URGENCY SIGNAL”?
6. What is SART and its use?
7. What is the meaning of “HOT WORK PERMIT” and “COLD WORK PERMIT”?
8. Write down the number of “LTA’s and “PYROTECHNICS” present on bridge.

9. What is "LTA" and its usage?
10. What do you know about "ARTICLE OF AGREEMENT"?

Part B

(5 × 5 = 25)

Answer **all** questions.

11. (a) How will you test the weather tightness of hatch covers? Explain.

Or

- (b) Draw a stockless anchor and label its parts.

12. (a) Explain the working procedure of "EPIRB".

Or

- (b) What "Planned Maintenance System" you will carry out for the "CRANE"?

13. (a) What is meant by RPSL and its roles and responsibilities?

Or

- (b) Draw a simple sketch of FORE PEAK and AFT PEAK TANK and briefly explain the usage.

14. (a) What are the precautions to be followed prior leaving "DRY DOCK"?

Or

- (b) How do you sent a "DISTRESS SIGNAL"?

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

Or

- (b) Explain the importance of Personal health and hygiene on board ship.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) What are the preparations you will do prior entering “DRYDOCK”?

Or

- (b) How do you lower “OPEN LIFE BOAT” to the water level from the stowed position?

17. (a) Explain various search patterns for “SEARCH and RESCUE” operations with diagrams.

Or

- (b) (i) What is a “FIRE TRIANGLE”?.
(ii) What are the types of fires and the type of FIRE extinguishers used for extinguishing FIRE?

18. (a) Explain in details about the maintenance of accommodation of a ship.

Or

- (b) Explain in detail about the checks you will carry out prior “Entry into an ENCLOSED SPACE.”

C-5754

Sub. Code

11637

B.Sc. DEGREE EXAMINATION, APRIL 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 Prime Vertical.
2. Define the term "DECLINATION".
3. What do you understand by Lunar Day?
4. What is meant by Siderial day?
5. What will you do when the ship crosses international date line on E'ly course?
6. Define 'V and 'd' corrections.
7. What do you understand by the term "Equinoctial"?
8. Define the term Prime Meridian.

9. Calculate the LHA of a star whose RA is 70° , for an observer in longitude 47°E , when GHA γ is 210° .
10. Define the term first point of Aries?

Part B (5 × 5 = 25)

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

11. (a) Define the following terms:
- (i) Rational horizon
 - (ii) Visible horizon and
 - (iii) Sensible horizon.

Or

- (b) Explain how do you get LHA*(Star) with a diagram?
12. (a) Briefly explain what do you know about mean, apparent and siderial times with a diagram.

Or

- (b) Briefly explain what do you understand by 'Zone Time'.
13. (a) Explain Geographical position of a body (GP) with a diagram.

Or

- (b) Apparent solar day is not of constant duration. Explain the same with a diagram.
14. (a) Solve the following and find out the deviation and / or compass error as applicable:
- (i) Compass course : 265°C True course: 271°T
Variation: 5°W .
 - (ii) True course: 214°T Compass course : 217°C .
 - (iii) Compass course: 156°C Dev: 5°W , Var 5°W .
 - (iv) Find the compass error if Dev 5°W and Var. 7°E .

Or

- (b) Briefly explain how to solve the ambiguity of Chronometer time.
15. (a) Briefly explain the contents and usage of Nautical Almanac.

Or

- (b) Explain the concept of position fixing by “Intercept method”.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Draw a diagram and define the following:
- (i) The Celestial Sphere
 - (ii) Celestial poles
 - (iii) Celestial equator
 - (iv) Parallels of Declination
 - (v) Celestial Meridian.

Or

- (b) What is International Date Line? How the clocks are adjusted when a ship crosses an INTERNATIONAL DATE LINE?
17. (a) On 1st May 2008, in DR 30° 06' N 179° 45' W, the setting sun bore 285°(C). If the variation is 2° W, find the deviation of the ship's head.

Or

- (b) On 23rd Sept. 2008, in DR 23° 40'N 161° 56'E, the sextant meridian altitude of the sun's LL was 66° 10.6'. If IE=2.3' on the arc and HE=10.5m, Find the latitude and the LOP.

18. (a) On 29th Nov 2008 in DR 26° 27'N 130° 27' W, the sextant altitude of the sun's UL East of the meridian was 28° 11', when the GMT time is NOV 29th 17h 47m 49s. If HE=10m and IE=2.3' off the arc, calculate the direction of LOP and the longitude where it cuts the DR latitude.

Or

- (b) On 19th Jan 2008, at about 1530hrs at ship in DR 40°16' S 175°31' E, the sextant altitude of the Sun's LL was 43°27.4' when the chron (error 02m 12s fast) showed 03h 50m 12s. If HE=22m and IE=1.5' on the arc find the intercept and the direction of the LOP.

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 – 5756

Sub. Code

11643

B.Sc. DEGREE EXAMINATION, APRIL 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. Name the type of steels and alloys used in ship construction.
2. What is Ceramics and state their uses.
3. State the effect of vacuum on the flash point of water.
4. What are marine boilers?
5. Mention the causes of drop in cooling system in ship's Refrigeration.
6. Define NPSH.
7. Specify the causes of overloading in pumps.
8. Enumerate the classification of I C Engines.
9. What are Prime movers?
10. Where do you use stretch gauge?

Part B

(5 × 5 = 25)

Answer **all** questions.

11. (a) What is the role of carbon in steel?

Or

(b) Describe the use of casting and forging in ship construction.

12. (a) List down safety arrangements provided on ship's Boilers.

Or

(b) With an aid of a diagram, explain the Electro-hydraulic steering system.

13. (a) Explain the priming process in a pump with a diagram.

Or

(b) Describe the axial flow of pumps with a neat diagram.

14. (a) How can you find the loose condition of tie-rods, while the engine is running?

Or

(b) Describe the role of Cross head bearing in I.C. Engine.

15. (a) Distinguish the difference between A.C and D.C. current in detail.

Or

(b) What is continuity testing? Explain in detail.

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) Explain the Hydrophore system, arrangement and operation with a neat diagram.

Or

- (b) Explain the Refrigeration system of the ship with a neat diagram.

17. (a) With an aid of a neat diagram, explain the working principle of 4- stroke engines.

Or

- (b) Discuss the Air-conditioning arrangement on board General cargo ship.

18. (a) Explain the working of deep-well pumps for Liquified Gas carriers.

Or

- (b) Explain the power distribution system on board a ship with a neat diagram.
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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 28th 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 4th 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 |

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 Floatation 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-5759

Sub. Code

11646

B.Sc. DEGREE EXAMINATION, APRIL 2022

Fourth Semester

Nautical Science

NAVIGATION – III

(2016 onwards)

Duration : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. What is Lunar moon?
2. Define the path of Totality.
3. Describe Circumpolar Bodies.
4. What is Nautex frequency of operation?
5. What is multiple ECHO?
6. Explain Vertex.
7. What is ARPA?
8. What is Transducer?
9. Name the satellites used for navigational purposes.
10. What are RACON?

Part B

(5 × 5 = 25)

Answer **all** questions.

(Draw neat sketches wherever necessary)

11. (a) Write notes on Solar and Lunar eclipses.

Or

- (b) What does “Liberation of Moon” mean?

12. (a) What is “V” correction? And why it must be applied to planets and moon?

Or

- (b) Write short notes on phases of moon.

13. (a) Explain DGPS.

Or

- (b) Discuss the uses of ARPA.

14. (a) Discuss the heavenly bodies.

Or

- (b) Mention the factors affecting the accuracy of GPS.

15. (a) Describe the free Gyroscope.

Or

- (b) What precautionary measures are to taken while using a course recorder?

Part C

(3 × 10 = 30)

(Draw neat sketches wherever necessary)

16. (a) Find the Distance and Initial Course and Final Course of Great Circle sailing from

Lat : 35 . 42' S 117° 06'E To

Long: 11 . 41'5 036° 16' E.

Or

- (b) Draw the block diagram of a Radar and explain the parts briefly.
17. (a) On the 6th March 1992, AM at DR 33° 30'N, 128° 11'W the Moon bore 104° (C) at 07 H 35M 02' S chron time (Err-04 m 06s Fast). If Variation was 2' E, find the Deviation.

Or

- (b) On 1st Dec 1992, PM at ship in DR 36° 27'N, 144° 44'E VENUS bore 235° (C) at 09H 18 M 08s chron time (err-10m 04s fast). If Var was 2.5' E, find the deviation for ship s head.
18. (a) Explain the errors associated with Gyro compass in brief.

Or

- (b) Write notes on:
- (i) Course recorder
 - (ii) AIS
 - (iii) VDR
 - (iv) Navtex

C – 5760

Sub. Code

11651

B.Sc. DEGREE EXAMINATION, APRIL 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 do you know about the height of stowage of timber deck cargo?
2. What do you understand by the term timber deck cargo?
3. What kind access and provisions for walkways are given for timber deck cargo?
4. What do you understand by Mate's Receipt and Who signs the Mate's receipt?
5. What do you understand by seaworthiness of a ship?
6. What is the objective of "IMDG code"?
7. What do you know about the term "UN number"?
8. What do you understand by DG Cargo manifest?
9. What are the types of Chemical tankers?
10. What is the purpose of IBC code?

Part B

(5 × 5 = 25)

Answer **all** questions.

11. (a) Briefly explain the hazards involved in carrying timber deck cargoes.

Or

- (b) Describe the factors affecting stability for timber deck cargo?

12. (a) What do you understand by the term “NOTE OF PROTEST”? What are the supporting documents required for Note of Protest?

Or

- (b) Explain briefly about the P and A manual of chemical tankers.

13. (a) Why TIMBER DECK CARGO requires regular INSPECTION? Explain.

Or

- (b) Briefly explain the effects of heavy lifts on the seaworthiness and the stability of the ship.

14. (a) What are the precautions you will observe prior loading IMDG cargoes? Briefly explain.

Or

- (b) List the classification of IMDG cargo.

15. (a) What are the hazards associated with chemical cargoes?

Or

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

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) What is meant by “CHARTER PARTY”? Explain different charter parties.

Or

- (b) Explain the loading of “TIMBER DECK CARGO” and “STOWAGE AND SECURING ARRANGEMENTS”.

17. (a) What do you understand by “CARGO CLAIMS”? What are the supporting documents you will ensure at the load port and log sheets while sailing to protect owner’s interest?

Or

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

18. (a) Explain the discharging procedure of a chemical tanker.

Or

- (b) (i) Explain TYPES A, B and C of a GAS CARRIERS.
(ii) Explain the hazards of GAS cargoes?

C-5766

Sub. Code

11661

B.Sc. DEGREE EXAMINATION, APRIL 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. What do you understand by the term Clean Water Act?
2. What are Sludge tanks?
3. Define the term Clean ballast.
4. State the limits of SO_x and NO_x in Marine fuels.
5. Mention contents of Oil Record Book.
6. What are Noxious liquid substances?
7. State the disposal limit of Garbage from nearest land.
8. Describe the duration and validity for NLS.
9. What are segregated ballast tanks?
10. How will you dispose the sewage in to sea?

Part B

(5 × 5 = 25)

Answer **all** questions.

11. (a) Explain the MARPOL 73/78.

Or

- (b) Enumerate the Special areas in which the discharge of oily water is prohibited.

12. (a) State the discharge standards under regulation 13 of MARPOL Annexure – II.

Or

- (b) What does MARPOL Annexure – III deal with? Explain in detail.

13. (a) List down the SOPEP equipment used on board ship.

Or

- (b) Discuss the role of PSC with respect to MARPOL act.

14. (a) State the criteria for identification of harmful substances in packed form.

Or

- (b) Describe the Garbage Management plan and Garbage record keeping on board ship.

15. (a) What is IMO 2020? Explain in the ships fuel compliance as per this standard.

Or

- (b) What is test cycle with respect to MARPOL Annexure – VI. State the weighing factors relevant to this.

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) Explain the MARPOL Annexure — I in detail.

Or

- (b) List down the various MARPOL certificates to be carried by a general cargoship and the validity of each certificate.

17. (a) Discuss in detail the OPA - 90 and National Pollution Discharge Elimination System.

Or

- (b) Explain the exception survey and certification of the chemical tankers. State the duration and validity of endorsement certificate.

18. (a) Discuss the Sewage Treatment system with an aid of neat sketch.

Or

- (b) With the aid of neat sketches explain the ship's incineration stem.

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?

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 3rd 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-5668

Sub. Code

11F

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

First Year – First Semester

Part – I – LANGUAGE FRENCH

(Common for all UG)

(2016/2018 onwards)

Duration : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. Comment allez-vous traduire en Français :
 - (a) English
 - (b) French
2. Comment allez-vous traduire en anglais :
 - (a) Grammaire
 - (b) Nom
3. Qu'est-ce que le Français?
4. Quelle est la différence entre l'anglais et le Français
5. Deux types de lettre commerciale?
6. Qu'est-ce qu'une lettre?
7. définir la communication?

8. Type de communication?
9. Ecrivez en Français.
- (a) 100
 - (b) 200
10. Ecrivez en anglais :
- (a) Quarante
 - (b) Cinquante

Part B

(5 × 5 = 25)

Answer **all** questions.

11. (a) Présentez votre famille en Français.
- Ou
- (b) Parler de vos loisirs en Français.
12. (a) Écrire des jours dans une semaine en Français.
- Ou
- (b) D'écrire votre ville natale.
13. (a) Traduire les articles indéfinis en anglais :
- (i) un garçon
 - (ii) des garçons
 - (iii) une fille
 - (iv) un homme
 - (v) une femme

Ou

(b) Traduire les articles définis en anglais :

- (i) Le père
- (ii) le Frère
- (iii) la mère
- (iv) l'homme
- (v) l'oiseau

14. Remplir les banques avec le, la, l'et les :

- (a) (i) _____ hommes
- (ii) _____ oreille
- (iii) _____ femme
- (iv) _____ filles
- (v) _____ garçon.

Ou

- (b) (i) _____ sœur
- (ii) _____ père
- (iii) _____ mère
- (iv) _____ frères
- (v) _____ horloge

15. Lister les signes en français :

- (a) (i) . →
- (ii) , →
- (iii) ; →
- (iv) : →
- (v) ? →

Ou

- (b) (i) - →
- (ii) – →
- (iii) “ ” →
- (iv) () →
- (v) ! →

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) D'écrivez l'autre fête que vous savez.

Ou

- (b) D'écrivez votre journée

17. (a) Formater une lettre de congé

Ou

- (b) rédiger une lettre d'excuse.

18. (a) Écrire l'alphabet en français.

Ou

- (b) Écrire les nombres de 1 à 20 en Français
