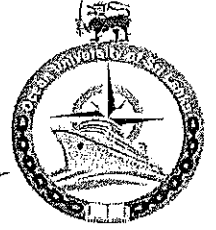




Ocean University of Sri Lanka

Aptitude Test 2022/2023

B. Sc. in Fisheries and Marine Sciences



NIC Number:-

Index No:-

Time Allowed: Two (02) hrs.

Date:

Instructions:

- Answer all the question on this paper itself
- Use a dark pencil/ black or blue ball point pen to mark the answers
- Calculators are not allowed

SECTION A - GENERAL KNOWLEDGE – 25 QUESTIONS

- 1) Who is the first human being to travel into outer space?
(i) Buzz Aldrin (ii) Neil Armstrong (iii) Michael Collins (iv) Yuri Gagarin
- 2) How many elements are in the periodic table?
(i) 118 (ii) 92 (iii) 70 (iv) 102
- 3) What is the tallest waterfall in the world?
(i) Nigra Falls (ii) Snow Creek Falls (iii) Angel Falls (iv) Browne Falls
- 4) Which country has the highest population per unit area?
(i) China (ii) Monaco (iii) Vatican City (iv) Bangladesh
- 5) The iconic Machu Picchu Citadel was built by
(i) The Incas (ii) The Pharaohs (iii) The Romans (iv) The Igloos
- 6) The British passenger liner RMS Titanic was built in
(i) Liverpool (ii) Belfast (iii) Southampton (iv) New York
- 7) What is the debut novel of 2022 The Booker prize winner Shehan Karunatilake?
(i) The English Patient (ii) Chinaman (iii) The Seven Moons of Maali Almeida (iv) Funny Boy
- 8) Who is not a former prime minister of the United Kingdom?
(i) Lizz Truss (ii) Angela Merkel (iii) Gordon Brown (iv) Teresa May

- 9) Which country gifted “Statue of Liberty” to the United States of America in 1886?
(i) France (ii) Italy (iii) Germany (iv) Mexico
- 10) Which country was the runner-up of the 2021 ICC Men’s T20 World cup?
(i) Australia (ii) India (iii) New Zealand (iv) Pakistan
- 11) Who set the 200m sprint Women’s World Record?
(i) Shelly-Ann Fraser-Pryce (ii) Dina Asher-Smith
(iii) Elaine Thompson-Herah (iv) Florence Griffith Joyner
- 12) Which was the host city of the 2022 Commonwealth games?
(i) Glasgow (ii) London (iii) Birmingham (iv) Edinburgh
- 13) What is the capital city of Ukraine?
(i) Kyiv (ii) Lviv (iii) Kharkiv (iv) Vinnitsa
- 14) Who is named as the “Goddess of War” in Greek Mythology?
(i) Artemis (ii) Persephone (iii) Athena (iv) Zena
- 15) How many “Sustainable Development Goals” have been declared by the United Nations?
(i) 14 (ii) 15 (iii) 16 (iv) 17
- 16) What is the largest country in the world?
(i) China (ii) India (iii) Russia (iv) Canada
- 17) Which country hosted the the 2021 United Nations Climate Change Conference, more commonly referred to as COP26?
(i) The United States (ii) Japan (iii) The United Kingdom (iv) Egypt
- 18) Which movie won the Best Picture Award at the 2022 Academy Awards?
(i) Drive My Car (ii) Dune (iii) King Richard (iv) CODA
- 19) Which one of these is NOT a book to movie adaptation?
(i) The Godfather (ii) To kill a mockingbird (iii) Avatar (iv) Little Women
- 20) Which is the largest island in the Indian Ocean?
(i) Madagascar (ii) Sumatra (iii) Sri Lanka (iv) Maldives
- 21) Which country’s coast is known as “White man’s grave”?
(i) Liberia (ii) Nigeria (iii) Sierra Leone (iv) Tanzania

- 22) Out of these, which US president has won the Nobel Peace Prize?
 (i) George W. Bush (ii) Bill Clinton (iii) Jimmy Carter (iv) Gerald Ford
- 23) Who won the 2022 Nobel Prize in Literature?
 (i) Annie Ernaux (iii) Abdulrazak Gurnah
 (ii) Salman Rushdie (iv) Svetlana Alexievich
- 24) Which year was Queen Elizabeth II's Golden Jubilee celebrated?
 (i) 2022 (ii) 2012 (iii) 2002 (iv) 1992
- 25) Which country's coastline was drastically damaged by the MV Wakashio oil spill?
 (i) Singapore (ii) Mauritius (iii) Sri Lanka (iv) Seychelles

SECTION B- SUBJECT KNOWLEDGE – 25 QUESTIONS

- 1) What is the third largest ocean in the world?
 (i) Atlantic (ii) Pacific (iii) Antarctic (iv) Indian
- 2) The earth's surface is comprised of how many major tectonic plates?
 (i) 5 (ii) 7 (iii) 6 (iv) 8
- 3) A prominent string of volcanic arcs and oceanic trenches, otherwise known as the "Ring of Fire" is situated at
 (i) The rim of the Pacific Ocean (iii) The rim of Antarctic Ocean
 (ii) The rim of the Indian Ocean. (iv) The rim of the Atlantic Ocean
- 4) The monsoon circulation in the Northern Indian Ocean (NIO) is unique because,
 (i) It originates in the middle of the ocean
 (ii) it develops in response to the bi-annual reversing monsoonal winds
 (iii) it is driven by density gradient in the water column
 (iii) None of the above
- 5) The deepest point of Mariana Trench is called;
 (i) The Challenger Deep (ii) The Deep Abyss (iii) The Deep Blue (iv) The Extreme Deep
- 6) La Niña is a process of;
 (i) Warming of surface ocean waters (iii) Eroding coastal beaches
 (ii) Cooling of surface ocean water. (iv) Occurring Tsunamis
- 7) The most common types of corals grow in
 (i) Warm tropical deep waters (iii) Cold temperate shallow waters
 (ii) Warm tropical shallow waters (iv) Cold temperate deep waters

- 8) Sea grasses are;
- (i) A type of Angiosperms
 - (ii) A type of Gymnosperms
 - (iii) A type of seaweed
 - (iv) A type of deep water habitats
- 9) Zooplankton are a group of
- (i) Colonizing organism
 - (ii) Unicellular organisms
 - (iii) Primary producers
 - (iv) Primary consumers
- 10) What is the false statement regarding phytoplankton?
- (i) Some groups of phytoplankton may release toxins
 - (ii) All phytoplankton groups are drifting organisms
 - (iii) Phytoplankton are found in marine water only
 - (iv) Phytoplankton carry photosynthetic pigments
- 11) What is the true statement regarding mangroves
- (i) Mangroves grow all around the world
 - (ii) Mangroves are adapted to grow in brackish water environments
 - (iii) Mangroves do not have any commercial value
 - (iv) Mangrove roots cannot survive low oxygenated soil.
- 12) Eutrophication is a result of
- (i) Plastic pollution
 - (ii) Agriculture runoff
 - (iii) Beach erosion
 - (iv) Coral bleaching
- 13) Tides in the sea are caused by
- (i) The Sun
 - (ii) The Moon
 - (iii) The Sun and the Moon
 - (iv) None of the above
- 14) Which one out of these, is the largest fish in the world?
- (i) Whale shark
 - (ii) Blue whale
 - (iii) Tiger shark
 - (iv) Megalodon
- 15) What is the true statement regarding sharks?
- (i) Some sharks are herbivores
 - (ii) Shark skeleton is made of cartilage
 - (iii) Sharks have been highly evolved through the time
 - (iv) All sharks are livebearers.
- 16) What is the true statement regarding sea turtles
- (i) Sea turtles always return to the same beach they were hatched for laying eggs
 - (ii) Sea turtles are herbivores
 - (iii) Sea turtles have gills for underwater breathing
 - (iv) Turtle shells are made of cartilages
- 17) What is the false statement regarding marine mammals?
- (i) Marine mammals have large lungs
 - (ii) Marine mammals are hunted for meat and oil.
 - (iii) All marine mammals are carnivores
 - (iv) Marine mammals use sound waves for communication.
- 18) The contribution of the fisheries sector for Sri Lankan Gross Domestic Production (GDP) is about
- (i) 10%
 - (ii) 2%
 - (iii) 4%
 - (iv) 5%

- 19) Marine Pollution Prevention Authority (MEPA) of Sri Lanka is
 (i) A government organization (iii) A private organization
 (ii) A research institute (iv) A community organization
- 20) Madu Ganga wetland is
 (i) A marine national park (iii) A Particularly Sensitive Sea Area (PSSA)
 (ii) An emission control area (iv) A RAMSAR site
- 21) The world's fastest growing food producing industry is
 (i) Aquaculture (ii) Poultry (iii) Capture fisheries (iv) Wheat production
- 22) What is the false statement regarding the legal order of the oceans?
 (i) Vessels can navigate in the territorial waters of foreign countries.
 (ii) All countries have freedom of fishing in the International Waters.
 (iii) Landlocked countries are not entitled to declare maritime boundaries.
 (iv) Countries can use the international waters for war purposes.
- 23) Food and Agriculture Organization (FAO) is
 (i) A United Nations Organization (iii) A US organization
 (ii) A UK organization (iv) An African Organization
- 24) International Maritime Organization (IMO) is responsible for
 (i) Regulating fishing (iii) Regulating international shipping
 (ii) Regulating marine scientific research (iv) Regulating peacekeeping
- 25) The goal of sustainable fisheries is
 (i) Protect all fisheries resources (iii) Harvest only large sizes of fish
 (ii) Conserve fisheries resources for future generations (iv) Obtain maximum harvest

SECTION C- GENERAL ENGLISH

Fill in the blanks with suitable words.

- 1) His eyes were..... bad that he couldn't read the number plate of the car in front.
 (i) very (ii) too (iii) so (iv) such
- 2) The company needs to decide.....and for all what its position is on this point.
 (i) that (ii) once (iii) here (iv) first
- 3) Don't put your cup on theof the table – someone will knock it off.
 (i) top (ii) side (iii) border (iv) edge
- 4) I'm sorry - I didn'tto disturb you.
 (i) mean (ii) plan (iii) have (iv) suppose
- 5) The singer ended the concerther most popular song.
 (i) by (ii) with (iii) at (iv) in

For the questions below, choose the best option to meaningfully complete the conversation between two people.

- 6) Can I park here?
(i) Sorry I did that (ii) It's the same place (iii) Only for an hour (iv) It sure can.
- 7) Shall we go out now?
(i) It's fine (ii) I'm in (iii) It's very confusing (iv) I know why
- 8) Can I get two tickets for tomorrow night?
(i) How much did you pay? (ii) They are sold out (iii) I am excited to go (iv) I'm not interested.
- 9) This book is too boring to read.
(i) I'm a bookworm too (iii) Reading is not my hobby
(ii) That makes two of us (iv) Don't you buy that book?
- 10) What color will you paint the living room of your new house?
(i) I hope it is right (iii) I can't make up my mind.
(ii) It's an essential decision (iv) I wonder why

Below is a letter that has been sent to Amaya by Minoli, who are close friends. Underline the most suitable word/phrase to answer questions 11 to 20.

Hi Amaya!

How are you doing? I 11. (haven't seen/haven't been seeing/I'm not seeing) you for ages. I think the last time we were together was at Niluka's housewarming party. Sorry I haven't been in touch, but I 12. (work/I've been working/I'm working) very hard recently. I 13. (have just come/just come/I've just been coming) back from Singapore. I was on a work placement there for an IT company. It was really interesting and I met some great people. Now, I'm back home and I 14. (worked/I'm working/I've worked) at a factory in Colombo, but it's pretty boring. Anyway, You'll never 15. (know/learn/guess) who's getting married. Vajira and Melani! I 16. (have gone/have been going/went) to their engagement party last month. Shehan 17. (learn/has learned/has been learning) to fly a plane. These lessons are really expensive though, so it'll be years before he completes his training. Menaka is still working at the medical centre as a receptionist. She's finished her optometry training, but she 18. (hasn't found/hasn't been finding/doesn't find) a suitable job yet. What about you? What have you been doing? Please, 19. (find/drop/get) me a message and let me 20. (hear/listen/know) your news. It'll be great to catch up with you again.

All the best,
Minoli

Read the paragraph and answer questions 21 to 25.

The instructions accompanying do-it-yourself products are regularly cited as a source of unnecessary expense or frustration. Few companies seem to test their instructions by having them followed by a first-time user. Often, essential information is omitted, steps in the construction process are taken for granted, and some degree of special knowledge is assumed. This is especially worrying in any fields where failure to follow correct procedures can be dangerous.

Objections to material in plain English have come mainly from the legal profession. Lawyers point to the risk of ambiguity inherent in the use of everyday language for legal or official documents, and draw attention to the need for confidence in legal formulations, which can come only from using language that has been tested in courts over the course of centuries. The campaigners point out that there has been no sudden increase in litigation as a consequence of the increase in plain English materials.

Similarly, professionals in several different fields have defended their use of technical and complex language as being the most precise means of expressing technical or complex ideas. This is undoubtedly true: scientists, doctors, bankers and others need their jargon in order to communicate with each other succinctly and unambiguously. But when it comes to addressing the non-specialist consumer, the campaigners argue, different criteria must apply.

Questions 21 – 25

Complete the summary below.

Choose **NO MORE THAN TWO WORDS** from the passage for each answer. Write your answers in boxes 21-25.

Consumers often complain that they experience a feeling of 21 when trying to put together do-it-yourself products which have not been tested by companies on a 22 In situations where not keeping to the correct procedures could affect safety issues, it is especially important that 23 information is not left out and no assumptions are made about a stage being self-evident or the consumer having a certain amount of 24

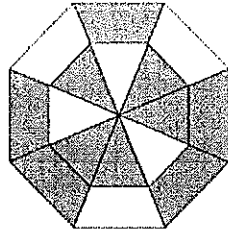
Lawyers, however, have raised objections to the use of plain English. They feel that it would result in ambiguity in documents and cause people to lose faith in 25....., as it would mean departing from language that has been used in the courts for a very long time.

21	22	23	24	25

SECTION D – IQ TEST – 25 QUESTIONS

1. A college professor teaches a class of 80 students. Fourteen students are business majors, six are education majors, and the rest are undecided. What percentage of the class is undecided?
(i) 50% (ii) 75% (iii) 60% (iv) 25%
2. An organization hosts monthly meals for families in the community. In March, 70 people attended the meal. In April, 60 attended. Their highest attendance was in May, with 20 more than April. What is their average monthly attendance?
(i) 75 (ii) 70 (iii) 80 (iv) 50
3. Which conclusion follows from the statements with absolute certainty?
None of the runners is a teacher All of the attendees are runners.
(i) Some runners are teachers (iii) No runners are attendees
(ii) Teachers are not attendees (iv) All runners are teachers
4. Mrs. Nalini is responsible for collecting all of the fifth grade classes' money for the school fundraiser.
Shehani attends Mrs. Nalini's school.
Mrs. Nalini is responsible for collecting Shehani's money for the fundraiser.
(i) Yes (ii) May be (iii) No (iv) No enough details to decide whether (i), (ii) or (iii)
5. If a store sold 25 pairs of socks, making a 25% profit of RS1500, how much did they charge for each pair?
(i) RS 300 (ii) RS 200 (iii) RS 150 (iv) RS 240
6. Nina, twelve years old, is three times as old as he sister. How old will Nina be when she is twice as old as her sister?
(i) 15 (ii) 18 (iii) 16 (iv) 14
7. An electric train is traveling South West at 60mph. The wind is blowing from the North East at 10mph. Which way is the smoke blowing?
(i) South West (ii) North (iii) South (iv) None of the above
8. Which fraction is the biggest?
(i) $\frac{3}{5}$ (ii) $\frac{1}{2}$ (iii) $\frac{5}{8}$ (iv) $\frac{4}{7}$
9. The day after the day after tomorrow is four days before Monday. What day is it today?
(i) Monday (ii) Tuesday (iii) Wednesday (iv) Thursday
10. What is the one third of one quarter of one fifth of one half of 120?
(i) 8 (ii) 12 (iii) 1 (iv) 6

11. What percentage of the figure is shaded?



- (i) $7/9$ (ii) $4/7$ (iii) $5/8$ (iv) $3/6$

12. Nimal is taller than Saman. Wimal is shorter than Nimal. Which of the following statement is more accurate?

- (i) Wimal is taller than Saman (iii) Wimal is as tall as Saman.
 (ii) Wimal is shorter than Saman (iv) It is impossible to tell whether Wimal or Saman is taller.

13. Calculate the answer:

$$16 \div 4(3 - 1)$$

- (i) 8 (ii) 4 (iii) 2 (iv) 1

14. Shanthi has twice as much money as Pushpa does. After Shanthi loans RS500 to Pushpa, she will have 1.5 time as much as Pushpa does. how much money did Pushpa have originally?

- (i) RS 1000 (ii) 1800 (iii) RS 1500 (iv) 2500

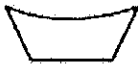
15. A fisherman has 5 fishes, namely A, B, C,D, E, each having a different weight. A weighs twice as much as B. B weighs four and a half times as much as C. C weighs half as much as D. D weighs half as much as E. E weighs less than A but more than C. Which fish is the lightest in weight?

- (i) A (ii) C (iii) B (iv) D

Which of the figures can be used to continue the series given below?

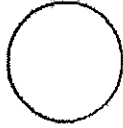
16.

17.



?

(i)



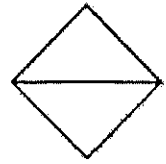
(ii)



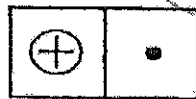
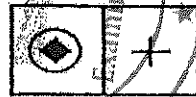
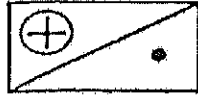
(iii)



(iv)

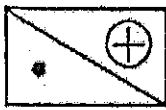


18.



?

(i)



(ii)



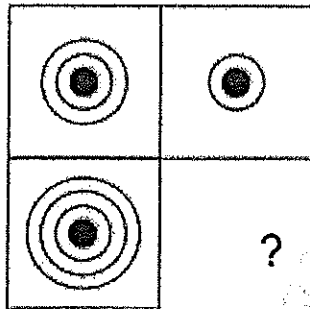
(iii)



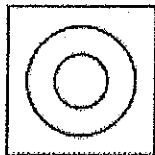
(iv)



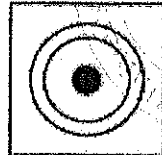
19.



(i)



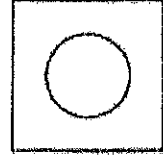
(ii)

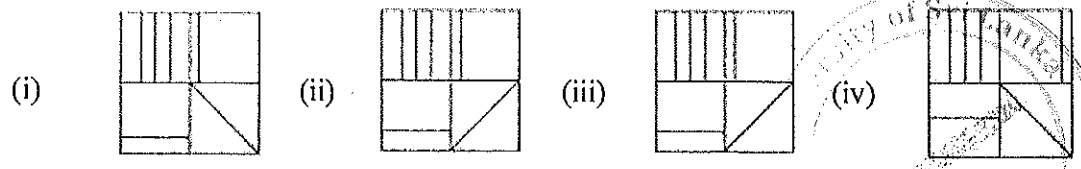
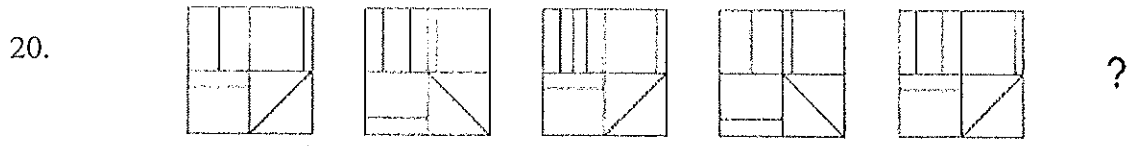


(iii)



(iv)





What is the next number in the series:

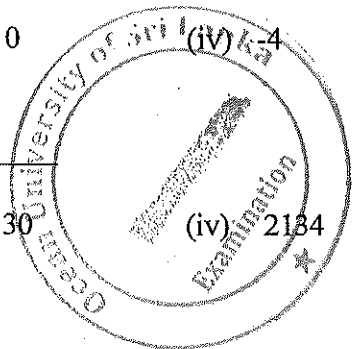
21. 7, 10, 16, 28, 52, ____
- (i) 88 (ii) 66 (iii) 100 (iv) 76

22. 144, 121, 100, 81, 64, ____
- (i) 44 (ii) 49 (iii) 47 (iv) 37

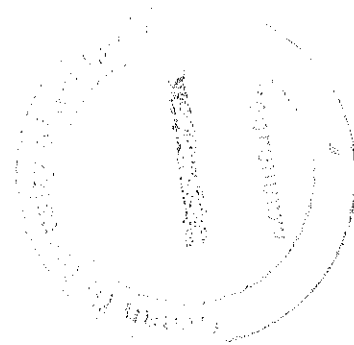
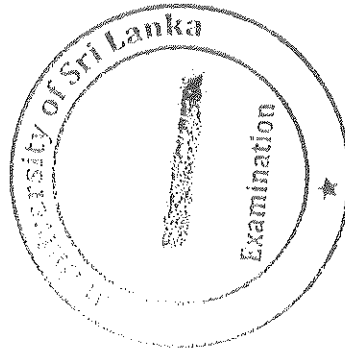
23. 1, 5, 14, 28, 47, ____
- (i) 77 (ii) 74 (iii) 68 (iv) 71

24. 55, 30, 14, 5, ____
- (i) 1 (ii) 3 (iii) 0 (iv) 4

25. 1109, 1116, 1123, ____
- (i) 1131 (ii) 1128 (iii) 1130 (iv) 2134



.....End of Paper.....





Ocean University of Sri Lanka
Aptitude Test 2022/2023
Maritime Transportation Management and Logistics
Examination

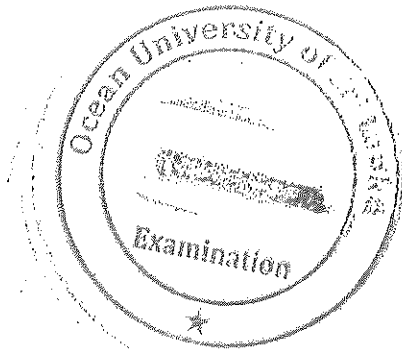
Index No

NIC No

Time: 02 Hours

Instructions:

- This paper consists of FOUR (04) sections in 10 pages
- Total marks attainable for this paper is 100.
- Marks are equally distributed among the four sections.
- Attempt all questions.
- Use a Black or Blue Ball point pen for answering.
- Only one answer is allowed for each multiple-choice question
- No marks will be deducted for wrong answers
- Calculators are not allowed.
- Erase unwanted marks clearly.
- Answer all questions on the paper itself.



SECTION A - Underline the correct answer. One mark for each question

1. Which country has won the Asia cup the most?
a) Sri Lanka b) Pakistan c) India d) Bangladesh
2. Which team was defeated by the National Netball team of Sri Lanka to become the defending champions in 2022?
a) Indonesia b) Singapore c) Malaysia d) Hong Kong
3. The next Summer Olympics is scheduled to be held in 2024 in
a) France – Paris c) USA – Los Angeles
b) Italy – Milan d) China – Beijing
4. How many times has the Sri Lankan Netball team won the Asian championship title?
a) 02 b) 04 c) 06 d) 08
5. Yupun Abeykoon became the first South Asian sprinter to break the 10 second barrier in 100m at the
a) International Athletics Meeting in Germany
b) Resisprint International athletic meet in Switzerland
c) Commonwealth Games in England
d) Diamond League in Switzerland
6. The upcoming FIFA World cup of 2022 will be held in
a) Russia b) USA c) Qatar d) Brazil
7. The famous painting “Creation of Adam” appearing on the ceiling of Sistine chapel in Vatican was drawn by
a) Leonardo da Vinci c) Sandro Botticelli
b) Michelangelo d) Johannes Vermeer
8. The famous novel “Anna Karenina” was written by
a) Leo Tolstoy c) Charles Dickens
b) William Shakespeare d) Ernest Hemingway
9. What is the book not authored by the famous Sri Lankan author, Mr. Martin Wickremasinghe?
a) Leela b) Soma c) Seetha d) Lasanda
10. Who was the first female appointed as a prime minister of a country in the world?
a) Sirimavo Bandaranaike c) Margaret Thatcher
b) Indira Gandhi d) Benazir Bhutto
11. Who is the current prime minister of the United Kingdom?
a) Liz Truss c) Rishi Sunak
b) Boris Johnson d) David Cameron
12. Who was the first prime minister of the Democratic Socialist Republic of Sri Lanka?
a) Hon. J.R. Jayewardena c) Hon. D.B. Wijetunga
b) Hon. R. Premadasa d) Hon. Sirimavo Bandaranaike

13. Prime minister is considered as the executive or the head of the government in
 a) Germany b) USA c) Canada d) Sri Lanka
14. Which space mission was successful to land on the moon?
 a) Apollo 9 b) Apollo 10 c) Apollo 11 d) Apollo 12
15. What is the most distant Man-made object in space from earth?
 a) Pioneer 1 b) Pioneer 2 c) Voyager 1 d) Voyager 2
16. World Teachers' Day is celebrated on
 a) 1st October b) 5th October c) 10th October d) 15th October
17. World Ocean Day is celebrated on
 a) 1st June b) 4th June c) 8th June d) 10th June
18. What is the world's largest lake by surface area
 a) Baikal b) Caspian c) Victoria d) Superior
19. Which country had allied with UK in the first World War?
 a) Japan b) Germany c) Turkey d) Austria
20. When did the second world war ended?
 a) 1939 b) 1942 c) 1943 d) 1945
21. UNCTAD stands for
 a) United Nations Committee on Transport and Development
 b) United Nations Committee on Technology and Development
 c) United Nations Conference on Technological Advancements and Development
 d) United Nations Conference on Trade and Development
22. Five Nobel Prizes awarded during the first awarding in 1901 did not include
 a) Economics b) Peace c) Literature d) Chemistry
23. Which country is not a member of the United Nations?
 a) Cuba b) Palestine c) Republic of Korea d) Democratic People's Republic of Korea
24. The United Nations headquarters is located in
 a) Geneva b) London c) Paris d) New York
25. Kyoto protocol is related to the
 a) Green House Gas emissions c) Sustainable development
 b) Ozone layer depletion d) Human rights

[1x25 = 25 Marks]

14. What percentage of cargo tonnage in the world is carried by Maritime Transportation?
 a) 60% b) 70% c) 80% d) 90%
15. What is the width of a 20ft standard general purpose container box used in Maritime transportation?
 a) 8ft b) 8ft 6inches c) 9ft d) 9ft 6inches
16. What is the ship that blocked the Suez canal in 2021?
 a) Ever Ace b) Ever Given c) Ever Act d) Ever Alot
17. How many ports in Sri Lanka are managed by the Sri Lanka Ports Authority?
 a) 5 b) 6 c) 7 d) 8
18. Where is the starting point of the E01 Expressway in Sri Lanka?
 a) Panadura c) Kadawatha
 b) Kottawa d) Kerawalapitiya
19. Which of the following cities was not connected by railway during the British colonization in Sri Lanka?
 a) Nuwaraeliya b) Ratnapura c) Mihintale d) Embilipitiya
20. Suez Canal is situated in
 a) Egypt b) Saudi Arabia c) Israel d) Lebanon
21. In which continent is the Panama Canal situated in?
 a) South America c) Africa
 b) North America d) Asia
22. What is the first autonomous electric cargo ship in the world?
 a) Zhi Fei of Bestway c) Yara Birkeland of Yara and Kongsberg
 b) Suzaka of NYK d) Mikage of MOL
23. Which of the following port has a fully automated container terminal?
 a) Hong Kong b) Rotterdam c) Liverpool d) Colombo
24. Who is not a partner of the joint venture to build and operate the West Container Terminal of the port of Colombo?
 a) Sri Lanka Ports Authority c) TATA Group
 b) Adani Group d) John Keells Holdings
25. Select the incorrect statement about Logistics
 a) Logistics is the overall process of managing how resources are acquired, stored, and transported to their destination
 b) Poor logistics in a business can impact its bottom line
 c) "Logistics" was initially a military-based term used in reference to how military personnel obtained, stored, and moved equipment and supplies
 d) Logistics is an entire system of producing and delivering a product or service, from sourcing the raw materials to the final delivery of the product or service to end users

[1x25 = 25 Marks]

SECTION C

1. Read the paragraph and answer the questions. (Two marks for each question)

Autonomous and remotely operated ships

Interest in autonomous and remotely controlled ships is growing fast. Enabled by recent developments in sensor technology, connectivity at sea, and analysis and decision support software and algorithms, the first commercial projects are ready for launch soon. The field is a wide one, with many different automation applications and concepts that could benefit the maritime industry, varying from completely unmanned ships to vessels remote-controlled from land-based virtual bridges, to support systems that warn the crew before a collision or help to optimize operations.

Autonomous shipping could offer a way to move cargo off the road and onto the sea, improving road congestion and lowering maintenance costs, while improving air quality and safety. These benefits have prompted many governments to look into autonomous concepts, with nations such as Finland, Japan, the USA, and Singapore conducting research and trials. In Norway, government agencies and industry bodies established the Norwegian Forum for Autonomous Ships (NFAS) to promote the concept of unmanned shipping. In addition, the Norwegian government turned the Trondheim Fjord into a test bed for autonomous ship trials. From the sensors on board, the reliability of machinery in an unmanned vessel, to the software which must be stable and cyber-secure, to national and international rules and regulations, there are many challenges that need to be addressed before this technology can be put into operation.

a) What are the factors accelerated the introduction of autonomous and remotely controlled ships?

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b) Identify the applications of autonomous and remotely controlled ships in maritime industry.

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c) Why are many governments interested in autonomous and remotely controlled ships?

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d) What are the countries conducting research and trials on autonomous and remotely controlled ships?

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e) What are the potential areas that might create challenges for autonomous and remotely controlled ships?

.....
.....
.....
.....

[2x5 = 10 Marks]

2. Fill in the blanks of the following passage using the most suitable word given below. (Half a mark for each correct answer).

[school, themselves, education, secondary, they, pupils, world, their, stage, wrong, read, study, learn, to, about, with, the, on, in, to]

Formal education has several stages. In the first stage children are taught to, write and count. They work hands and voices. Theyto work together. They have..... begin to understand right and, From this stage they go to learn more about and the world in which live. These two stages of usually take place in primary and may continue into the school. At secondary school pupils different subjects. These subjects add knowledge of thein which they live. As somefinish their schooling during thisthey need to know aboutwork they will do and life as a citizen. Some schools train pupils for certain kind of jobs workplaces. Otherwise, training is given at work.

[0.5x20 = 10 Marks]

3. Rewrite the following sentences beginning with the word given. (One mark for each correct sentence)

Ex: Q: Valuable minerals are not found in every country.

A: Every country does not have valuable minerals.

a. A number of gases make up the air we breathe.

The air we

b. Oxygen is the life-giving gas of the air.

The life-giving

c. The belt of air that covers the earth is about 72 kilometres thick.

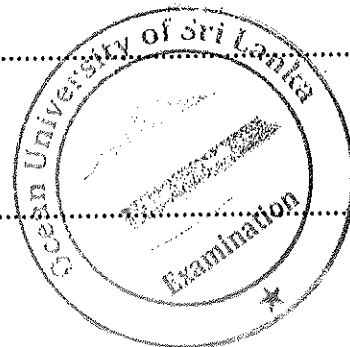
The thickness of

d. The gases in the atmosphere are not equally distributed.

There is no

e. At high levels above the ground the air thins out.

The air is

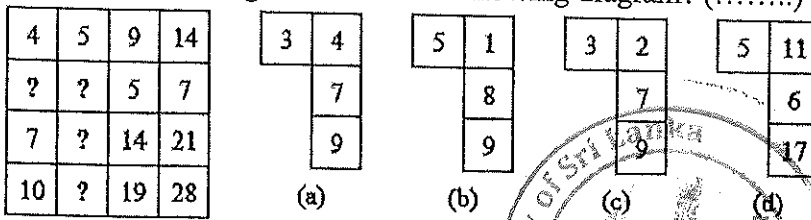


[01x05 = 05 Marks]

[Total 25 Marks]

SECTION D - Write the correct answer in the space given. One mark for each question

1. Which is the missing section of the following diagram? (.....)



2. What are the missing numbers? (.....)

- 42, (21, 11), 33
- 56, (28, 09), 27
- 64, (... , ...), 51

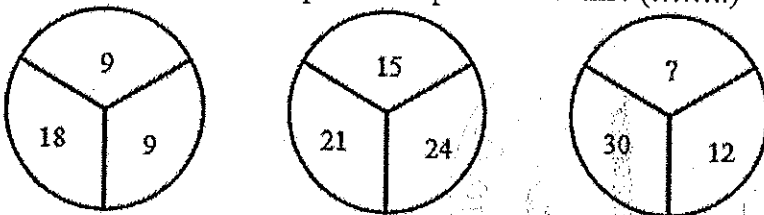
3. What number comes next? (.....)

- 3, 7, 15, 31, 63,

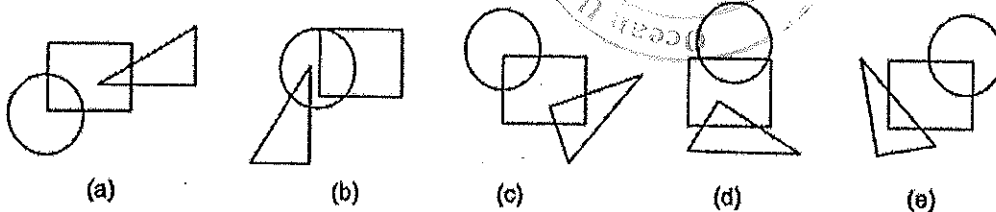
4. The combined age of Roy and Tom is 26. The combined age of Tom and Jane is 30. The combined age of Roy and Jane is 28. How old is Roy, Tom, and Jane?

Roy - Tom - Jane -

5. Which number should replace the question marks? (.....)



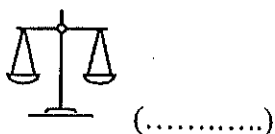
6. Select the odd figure from below. (.....)



7. Make an eight-letter word out of the following five letters.

M, T, O, W, R - (.....)

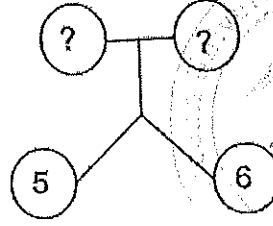
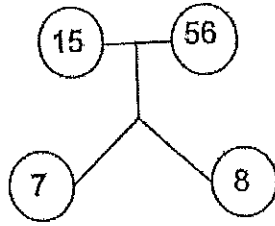
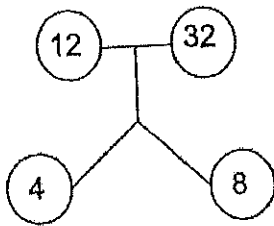
8. You are given eight (8) identical spheres in shape and size with a balance scale as in the figure below. Among the eight spheres, one sphere weighs 500g higher than the remaining seven (7). What is the minimum number of measurements required to identify the sphere with a different weight?



9. What number should replace the question marks? (.....)

32	19	51	?	121
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10. In ten years, the combined age of two brothers and three sisters will be 100 years. What will be the combined age of them in 5 years? (.....)
11. If 347902 and 806578 represent 1411 and 1420 respectively, what does 691308 represent? (.....)
12. What numbers should replace the question marks? (.....,)



13. How many minutes is to before 11 a.m. if 30 minutes ago it was four times as many minutes past 9.30 a.m.? (.....)
14. Anil got the major share and Sunil got the minor share from a payment of Rs. 2,500. The difference between the shares was Rs. 1,000. In what ratio did they share the money? (.....)
15. What number should replace the question mark? (.....)

13	8	22
13	11	16
27	21	75

41	10	23
11	?	12
33	13	43

16. For a 200km journey, if a van had increased speed by 10km/h, the journey would have been completed 1 hour earlier. What was the original speed of the van for the journey? (.....)
17. Select the odd word from the following. (.....)
 (a) Column (b) Balance (c) Ascend (d) Pencil (e) Molten (f) Option
18. Nuwan's watch was correct at 6.00 a.m. today, after which it began to lose 15 minutes per hour until 5 hours ago when it stopped completely. It now shows time as 9.45. What is the correct time now? (.....)

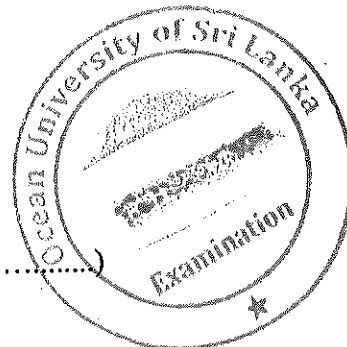
19. Find the answer for the calculation below.

$$5 \times 6 + 20 - 4 \times 12 = (\dots\dots)$$

20. Find the next month of the following sequence.

January, February, April, July, November, (.....)

21. Select the next word of the following sequence from the answers given below. (.....)



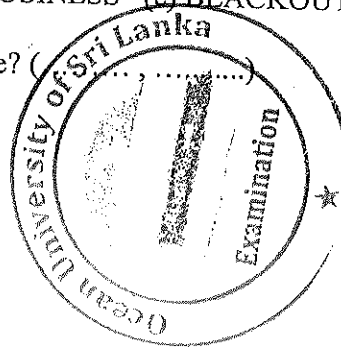
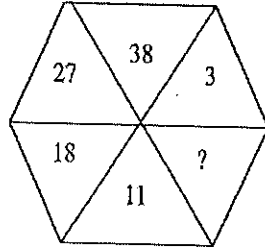
BUFF, BULGE, BULLET, BUTCHER, BUTTRESS,

- (a) BURDEN (b) BUTTERCUP (c) BUMBLE (d) BUSINESS (e) BLACKOUT

22. What are the next two numbers of the following sequence? (.....)

1, 10, 2.5, 8.5, 4.0, 7.0, 5.5, 5.5, 7.0,,

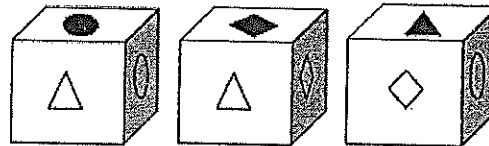
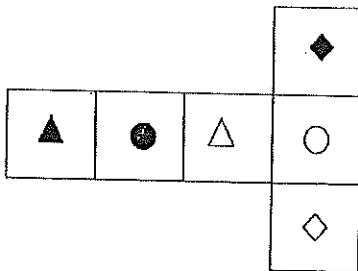
23. What number should replace the question mark? (.....)



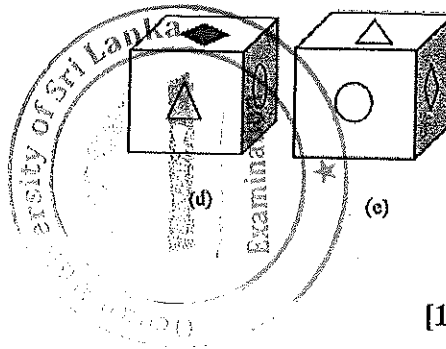
24. A train travelling at a speed of 80 km/h enters a tunnel 2 km long. The length of the train is 80 metres. How long does it take for the entire train to pass through the tunnel from the moment of entry to the moment the rear emerges? (.....)

(.....)

25. Identify the possible cube when the shape below is folded to form a cube. (.....)



(a) (b) (c)



(d) (e)

[1 x 25 = 25 Marks]

~ End of Paper ~