INSTRUCTIONS TO THE CANDIDATES

1. This Question Paper has Four sections, each comprising 25 questions. Answer all questions.

2. Choose the most appropriate answer and select the options (A, B, C or D). Selecting more than one options not permitted.

3. Each question carries Four marks. For every wrong answer One mark will be deducted.

4. Candidates are required to obtain over all 50% marks in the examination and have to score minimum 40% marks in each section.

5. Rough work to be done only on loose sheet provided at the centre.

6. Do not write/ copy questions on the loose sheet provided for the rough work.

7. Return all loose sheets at the end of the examination.
Read the following passage and answer the following questions.

The debate on whether Australia will have a nation-wide carbon trading scheme ended last week with the government committed to a national emissions scheme from 2012. However, the decision-making as to how we power the economy in a carbon constrained world is only just beginning.

Fossil fuels like coal and oil have underpinned our economic growth and standard of living for decades. The current resources boom is there because other countries want our fossil fuels, and for all these reasons it is profitable to keep mining them. Ironically, the income may help develop the technologies to replace them, but it is a matter of which and when. Almost certainly, in the race to reduce emissions, new technologies such as solar, wind and geothermal (heat from rocks) power will compete against gas, clean coal and perhaps nuclear energy to win the hearts and minds of the business world. In the end, business will favour whatever is a cheap, abundant and reliable solution. You can imagine the lobbying that will ensue from the different interest groups, to attract business capital and government support so that their technology wins out. There may be many collapsed ventures and lost fortunes along the way.

1. Fossil fuels will be in demand for some time yet because:
   (A) We have no other options.
   (B) They are plentiful and cheap in Australia.
   (C) Our wealth and lifestyle are at present dependent on them.
   (D) A and B together.

2. In the writer's view 'there may be many collapsed ventures' along the way because:
   (A) Cheaper fossil fuels will continue to be used for a long time.
   (B) Business will favour existing sources, rather than undergoing expensive change.
   (C) Carbon emission rules will cripple new energy sources.
   (D) Not all the options will be adopted, so the cheaper and more efficient will survive.

3. Choose the word which is most nearly the SAME in meaning as the word printed in bold as used in the passage.

4. Emissions
   (A) efficient  (B) discharge  (C) extraction  (D) input

5. Underpinned
   (A) strengthen  (B) reduce  (C) project  (D) upgrade

6. Choose the synonym for the given word: Element
   (A) Prime  (B) Component  (C) Particle  (D) Persons

7. Choose the antonym for the given word: Astatic
   (A) Dynamic  (B) Unstable  (C) Stable  (D) Directionless

8. Choose the correct sentence from the following:
   (A) Martha missing her dog who died of a skin infection at a very young age.
   (B) Martha miss her dog who died of a skin infection at a very young age.
   (C) Martha misses her dog who died of a skin infection at a very young age.
   (D) Martha missed her dog who died of a skin infection at a very young age.

9. Choose the correct alternative to substitute the given words:
   "To get upper hand"
   (A) to have no effect  (B) to get the better position  
   (C) to be in a difficult situation  (D) to cover an unpleasant thing by a pleasant one

10. "To destroy"
    (A) to dig the grave  (B) to end in smoke/fiasco 
    (C) to feather one's own nest  (D) to flog a dead horse

11. Choose the correctly punctuated sentence:
    (A) He said, "Why didn't you send your application to me?"
    (B) He said; "Why didn't you send your application to me?"
    (C) He said that "Why didn't you send your application to me?"
    (D) He said : "Why didn't you send your application to me"
12. **One word substitution:**
   A fixed orbit in space in relation to earth
   (A) Geo centric  (B) Geological  (C) Geo stationary  (D) Geo synchronous

**Change from Direct to Indirect or vice versa:**
13. He says, "I am not feeling well today."
   (A) He say that he is not feeling well today
   (B) He says that he is not feeling well today
   (C) He says he is not feeling well today
   (D) He says that he was not feeling well today

14. He will say to me, "You are not kind to me."
   (A) He will tell me I am not kind to him.
   (B) He was to tell me that I am not kind to him.
   (C) He will tell me that I am not kind to him.
   (D) He would tell me that I am not kind to him.

**Change from Active to Passive or vice versa:**
15. Has the price rise affected all the people
   (A) Have all the people been affected by the price rise?
   (B) Are all the people being affected by the price rise?
   (C) Had all the people being affected by the price rise?
   (D) Are all the people affected by the price rise?

16. Why haven’t they allowed you to go
   (A) Why you haven’t been allowed to go?
   (B) Why haven’t you been allowed to go?
   (C) Why were you not allowed to go?
   (D) Why you were not allowed to go?

**Fill in the blanks with appropriate blanks:**
17. Kevin keeps all his marbles _____ a leather pouch
   (A) inside  (B) at  (C) out  (D) below

18. He was advised to abstain _____ all alcoholic drinks
   (A) in  (B) at  (C) from  (D) by

19. If you are thinking about investigations overseas, _____ sense to find an experienced guide?
   (A) is it not making
   (B) doesn’t it make
   (C) does is make
   (D) is it making

20. Kyle ________ (teach) at the university since January.
    (A) taught  (B) has been teaching
    (C) was teaching  (D) teach

21. We ________ (not/work) today.
    (A) had been not working  (B) not works
    (C) have not been working  (D) not worked

22. Ram’s cake taste ________ than mine.
    (A) better  (B) best  (C) more better  (D) bestest

23. Ramesh fell down while he was running ________ a bus.
    (A) on  (B) after  (C) for  (D) to

24. ________ the workers in the factory have decided to stop working until their demand for a pay-rise has been met.
    (A) the whole  (B) some  (C) most  (D) all

25. **Choose the sentence with correct usage of pronoun:**
    (A) The treatment received by me was such, which I never expected.
    (B) The treatment received by me was such, as I never expected.
    (C) The treatment received by myself was such, which I never expected.
    (D) The treatment received by myself was such, as I never expected

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Choose the correct answer:-

1. Choose the figure which is different from the rest.

   ![Figures](image)

   (A) 1    (B) 2    (C) 3    (D) 4

2. Choose a figure which would most closely resemble the unfolded form of Figure (Z).

   ![Unfolded Figures](image)

   (A) 1    (B) 2    (C) 3    (D) 4

3. Complete the given series by finding the missing term(s):

   1, 6, 15, ?, 45, 66, 91

   (A) 25    (B) 26    (C) 27    (D) 28

4. `a_b_a_b_b_a_b`

   (A) abaab    (B) abbab    (C) aabba    (D) bbabb

5. In a family, the father took 1/4 of the cake and he had 3 times as much as each of the other members had. The total number of the family members is

   (A) 3    (B) 7    (C) 10    (D) 12

6. How many such pairs of letters are there in the word `INSTRUCTION` which have as many letters between them in the word as in the English alphabets?

   (A) 1    (B) 2    (C) 3    (D) 4
7. **Find out the association**: Mountain : Hill :: Tree : ?
   (A) Ground
   (B) Leaf
   (C) Forest
   (D) Shrub

8. The sum of seven numbers is 235. The average of the first three is 23 and that of the last three is 42. The fourth number is
   (A) 40  (B) 126  (C) 69  (D) 195

9. In a certain code language, POND is written as RSTL, then what will be the code of HEAR?
   (A) GHIJ
   (B) GHIZ
   (C) JIGZ
   (D) JCLZ

10. What is the value of 0.242424....?
    (A) 23/99
    (B) 8/33
    (C) 7/33
    (D) 47/198

11. If p+r = 2q and 1/q + 1/s = 2/r, then
    (A) p:s = r:q
    (B) p²:r² = q:s
    (C) p·q = r·s
    (D) p² = 2r + s

12. If the average of two numbers is xy. If one number is x, the other number is
    (A) y/2
    (B) y
    (C) 2xy-x
    (D) x(y-1)

13. Sanjeev can do a work in 50 days. Manish is 20% more efficient than Sanjeev. How long would Manish take to do the same work?
    (A) 124/3 days
    (B) 10 days
    (C) 25 days
    (D) 125/3 days

14. A person travels a certain distance at 3 km/h and reaches 15 min late. If he travels at 4 km/h, he reaches 15 min earlier. The distance he has to travel is
    (A) 4.5 km
    (B) 5 km
    (C) 7.2 km
    (D) 12 km

15. Which word cannot be formed by using the letters of the given word? ADMINISTRATION
    (A) RATION  (B) MINISTER  (C) TRADITION  (D) STATION

16. The sum of digit of the smallest number which when multiplied by 900, gives as perfect cube is
    (A) 2  (B) 3  (C) 6  (D) 9

17. List price of a video cassette is `100. A dealer sells three video cassettes for `274.50 after allowing discount at certain rate. The rate of discount allowed is
    (A) 7%
    (B) 7.5%
    (C) 8%
    (D) 8.5%
18. \((31\% \text{ of } 260) \times ? = 12896\)
   (A) 140
   (B) 150
   (C) 160
   (D) 120

19. If for integers \(a, b\) and \(c\), \(\text{HCF}(a,b) = 1\) and \(\text{HCF}(a,c) = 1\), then which one of the following correct?
   (A) \(\text{HCF}(a, bc) = 1\)
   (B) \(\text{HCF}(a, bc) = a\)
   (C) \(\text{HCF}(a, bc) = b\)
   (D) none of these

20. What is the number of integral solutions of the equations \(\text{HCF}(a, b) = 5\) and \(a + b = 65\)?
   (A) Less than 65
   (B) Infinitely many
   (C) Exactly one
   (D) none of these

21. A certain sum at certain rate \% per annum simple interest becomes '2100 in 2 years and '2250 in 5 years. The principal and rate of interest are
   (A) '2000; 2.5\%
   (B) '2000; 2\%
   (C) '1000; 2.5\%
   (D) '1500; 3\%

22. In how many years a sum will be double at 5\% simple interest?
   (A) 12
   (B) 17
   (C) 16
   (D) 20

23. The area of a rhombus with side 13 cm and one diagonal 10 cm will be
   (A) 140 cm²
   (B) 130 cm²
   (C) 120 cm²
   (D) 110 cm²

24. If the area of an equilateral triangle is \(x\) and its perimeter is \(y\), then which one of the following is correct?
   (A) \(y^4 = 432 \times (x^2)\)
   (B) \(y^4 = 216 \times (x^2)\)
   (C) \(y^2 = 432 \times (x^2)\)
   (D) none of these

25. Four equal-sized maximum circular plates are cut off from a square paper sheet of area 784 cm². The circumference of each plate is
   (A) 11 cm
   (B) 22 cm
   (C) 33 cm
   (D) 44 cm

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Choose the correct answer:-

1. Glycerol which decompose at its boiling point can be purified by
   (A) steam distillation
   (B) simple distillation
   (C) distillation under reduce pressure
   (D) fractional distillation

2. When a earth satellite dissipates energy, it moves to a
   (A) lower orbit and its kinetic energy increases
   (B) higher orbit and its kinetic energy decreases
   (C) lower orbit and its kinetic energy decreases
   (D) higher orbits but its kinetic energy increases

3. Electromotive force represents
   (A) force
   (B) energy
   (C) energy per unit charge
   (D) current

4. Which one of the following is correct for resultant of balanced forces
   (A) it is zero
   (B) it is a non-zero
   (C) it varies continuously
   (D) none of these

5. It’s difficult to walk on ice because of
   (A) more inertia
   (B) more friction
   (C) absence of friction
   (D) absence of inertia

6. A particle is moving freely. Then, its
   (A) kinetic energy is always greater than zero
   (B) potential energy is greater than zero and kinetic energy is less than zero
   (C) potential energy is less than zero and kinetic energy is greater than zero
   (D) potential energy is zero and kinetic energy is less than zero

7. An incident ray strikes a plane mirror at an angle of 15° with the mirror. The angle between the incident ray and reflected ray is
   (A) 15°
   (B) 30°
   (C) 150°
   (D) none of these

8. If soft iron is used as a core in a solenoid, then it is called
   (A) electromagnet
   (B) bar magnet
   (C) ferromagnet
   (D) iron magnet

9. Arrange the following elements in the increasing order of their metallic property
   (A) Na,Li,Rb,K,Cs
   (B) Cs,Rb,K,Na,Li
   (C) Li,Na,K,Rb,Cs
   (D) Li,Na,K,Cs,Rb
10. Frequency (n) of oscillation and time period (T) are related as
   (A) $nT = 1$
   (B) $nT^2 = 1$
   (C) $n^2T = 1$
   (D) $n^2T^2 = 1$

11. Atomic size is in the order of
   (A) $10^{-8}$ cm
   (B) $10^{-10}$ cm
   (C) $10^{-13}$ cm
   (D) $10^{-6}$ cm

12. An acid is a substance which
   (A) donates a proton
   (B) accepts an electron pair
   (C) gives $H^+$ in water
   (D) all of these

13. Plasma membrane is
   (A) selectively permeable
   (B) flexible
   (C) lipoprotein membrane
   (D) all of these

14. A nibble is equal to ______ bits.
   (A) 16
   (B) 32
   (C) 04
   (D) 08

15. Three sets of English, Mathematics and Science books containing 336, 240 and 96 books respectively
    have to be stacked in such a way that all the books are stored subject wise and the height of each stack is
    the same. Total number of stacks will be:
    (A) 14
    (B) 21
    (C) 22
    (D) 48

16. What is the greatest number of 3 digits which when divided by 6, 9 and 12 leaves a remainder 3 in each
    case.
    (A) 903
    (B) 939
    (C) 975
    (D) 996

17. If the difference between the reciprocal of a positive proper fraction and the fraction itself be 9/20 ,then the
    fraction is
    (A) 5/4
    (B) 4/5
    (C) 3/5
    (D) 3/10

18. What is the sum of squares of the roots of the equation $x^2+2x-143=0$
    (A) 170
    (B) 180
    (C) 190
    (D) 290
19. If one of the roots of the equation \( x^2 + ax - b = 0 \) is 1, then what is the value of \((a-b)\)?

(A) -1  
(B) 1  
(C) 2  
(D) -2

20. **Direction:** Consider a triangle ABC in which \( \cos A + \cos B + \cos C = \sqrt{3} \sin \frac{\pi}{3} \)

What is the value of \( \sin \frac{A}{2} \sin \frac{B}{2} \sin \frac{C}{2} \)?

(A) 1/2  
(B) 1/4  
(C) 1/8  
(D) 1/16

21. **Direction:** Consider a triangle ABC in which \( \cos A + \cos B + \cos C = \sqrt{3} \sin \frac{\pi}{3} \)

What is the value of \( \cos \left( \frac{A+B}{2} \right) \cos \left( \frac{B+C}{2} \right) \cos \left( \frac{C+A}{2} \right) \)?

(A) 1/4  
(B) 1/2  
(C) 1/16  
(D) none of these

22. From an aero plane above a straight road the angles of depressions of two positions at a distance 20 m apart from the road are observed to be 30 degree and 45 degree. The height of the plane above the ground is

(A) 10\(\sqrt{3}\) m  
(B) 10(\(\sqrt{3}-1\)) m  
(C) 10(\(\sqrt{3}+1\)) m  
(D) 20m

23. The geometric mean and harmonic mean of two non-negative observations are 10 and 8 respectively. Then, what is the arithmetic mean of the observation?

(A) 4  
(B) 9  
(C) 12.5  
(D) 25

24. A coin is tossed three times. What is the probability of getting head and tail alternately?

(A) 1/8  
(B) 1/4  
(C) 1/2  
(D) 3/4

25. Total number of elements in the power set of A containing 15 elements is

(A) \(2^{15}\)  
(B) \(15^2\)  
(C) \(2^{15} - 1\)  
(D) \(2^{15} - 1\)
Choose the correct answer:-

1. The most famous Indo-Greek ruler to rule over India, noted for his justice and popularity with his subjects,
   (A) Rudradaman
   (B) Menander
   (C) Eukratides
   (D) Demetrios

2. The latitude is the angular distance of a point of the Earth’s surface, North or South of the equator as measured from the
   (A) centre of the earth
   (B) tropic of Cancer or the Capricorn
   (C) equator
   (D) poles

3. The largest ecosystem of the Earth is
   (A) Biosphere
   (B) Hydrosphere
   (C) Lithosphere
   (D) Biome

4. What is the special constitution position of Jammu & Kashmir?
   (A) Indian laws are not applicable
   (B) it has its own constitution
   (C) it is not one of the integral part of Indian Union
   (D) it is above the constitution

5. Kalamkari painting refers to
   (A) a hand painted cotton textile in South India
   (B) a handmade drawing on bamboo handicrafts in North-East India
   (C) a block painting woolen cloth in western Himalayan region of India
   (D) a hand painted decorative silk cloth in North Western India

6. The famous phrase ‘Tattavamsi’ is found in which of the following Upanishads?
   (A) Chhandogya
   (B) Mundaka
   (C) Mandukya
   (D) Isavasya

7. Gandhiji launched the struggle in Ahmedabad in 1917-18 which involved the
   (A) peasants
   (B) industrial workers
   (C) masses
   (D) labourers

8. Which of the following states of India has made unique venture of putting daughters’ nameplate on the front of the house?
   (A) Punjab
   (B) Haryana
   (C) Uttar Pradesh
   (D) Madhya Pradesh
9. In India, agriculture income is calculated by:
   (A) Output method
   (B) Input method
   (C) Expenditure method
   (D) Commodity flow method

10. Who won the best actor award at 65th National Film Awards:
    (A) Yayraj
    (B) Riddhi Sen
    (C) Ranveer Kapoor
    (D) Akshay Kumar

11. Which sportsman bagged the title of Sportsman of the year award in Laurens World Sports Awards in 2018?
    (A) Roger Federer
    (B) Rafael Nadal
    (C) Cristiano Ronaldo
    (D) JJ Watt

12. Which of the following sets of bill is presented to the Parliament along with the Union Budget?
    (A) Direct Taxes Bill and Indirect Taxes Bill
    (B) Contingency Bill and Appropriation Bill
    (C) Finance Bill and Contingency Bill
    (D) Finance Bill and Appropriation Bill

13. Who amongst the following is the author of the classical book ‘Life Divine’?
    (A) Ravi Shankar
    (B) Swami Vivekananda
    (C) Radha Krishna
    (D) Aurobindo Ghosh

14. Who won the 2018 Pulitzer prize for fiction “Less”?
    (A) Andrew Sean Greer
    (B) Kiran Bedi
    (C) Patrick French
    (D) Jennifer Croft

15. Which is the India’s biggest naval base build under project ‘Sea Bird’?
    (A) INS Kadamba (Karwar)
    (B) National Defence Academy
    (C) INS Utkarsh
    (D) none of these

16. The Tessa treaty has became a bone of contention between India and _____.
    (A) China
    (B) Pakistan
    (C) Bangladesh
    (D) Nepal

17. Where the largest Sea Port in the world is situated?
    (A) Shangai
    (B) Kolkata
    (C) Tokyo
    (D) none of these
18. Which is the busiest river in the world?
   (A) Nile
   (B) Amazon
   (C) Rhine
   (D) none of these

19. SDRs stands for:
   (A) Significant Drawing Rights
   (B) Special Drawing Rights
   (C) Soft Drawing Rights
   (D) Small Drawing Rights

20. Which of the following is not correct?
   (A) NMA - National Monuments authority
   (B) SIT - Special Investigation Team
   (C) BSF - Border security Force
   (D) ASI - Archaeological Survey of India

21. First Hindu American to enter in the US House of Representative as senator is
   (A) Tulsi Gabbard
   (B) Sunita Williams
   (C) Jyoti Sengupta
   (D) Ami Bera

22. Which of the following is observed as Sports Day every year?
   (A) 22\textsuperscript{nd} April
   (B) 26\textsuperscript{th} July
   (C) 29\textsuperscript{th} August
   (D) 2\textsuperscript{nd} October

23. What was the theme for the 70\textsuperscript{th} Republic Day parade?
   (A) Life of Gandhi
   (B) Heritage of India
   (C) Unity in diversity
   (D) none of these

24. Which word is chosen by the Oxford dictionary as the Hindi word of the Year?
   (A) Nari Shakti
   (B) Atulaya
   (C) Ekta
   (D) none of these

25. Which state joined with British Council on educational collaboration?
   (a) Arunachal Pradesh
   (b) Himachal Pradesh
   (c) Bihar
   (d) Tamil Nadu

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