

1.  $\int \frac{2x^3}{4+x^4} dx$  is \_\_\_\_\_  
 a)  $\log|4+x^4|+c$  b)  $\frac{1}{2} \log|4+x^4|+c$  c)  $\frac{1}{2} \log|4+x^4|$   
 d)  $\log \left| \frac{2x^3}{4+x^4} \right| + c$
2.  $\int \frac{2x+3}{\sqrt{x^2+3x+2}} dx$  is \_\_\_\_\_  
 a)  $\sqrt{x^2+3x+2} + c$  b)  $\frac{2}{3}(x^2+3x+2)^{\frac{3}{2}} + c$  c)  $2\sqrt{x^2+3x+2} + c$   
 d)  $\log(x^2+3x+2)+c$
3. If  $f(x)$  is a continuous function and  $a << b$ , then  $\int_a^c f(x)dx + \int_c^b f(x)dx$  is \_\_\_\_\_.  
 a)  $\int_a^b f(x)dx - \int_a^c f(x)dx$  b)  $\int_a^c f(x)dx - \int_a^b f(x)dx$   
 c)  $\int_a^b f(x)dx$  d) 0
4.  $\Gamma\left(\frac{1}{2}\right) =$  \_\_\_\_\_  
 a)  $\pi$  b)  $\sqrt{\pi}$  c) 0 d) 2
5. If  $f(x)$  is an odd function, then \_\_\_\_\_.  
 a)  $\int_{-a}^a f(x)dx = 0$  b)  $2\int_a^0 f(x)dx = 1$  c)  $\int_a^b af(x)dx = 1$   
 d) none of these
6. If  $n > 0$ , then  $\Gamma(n)$  is \_\_\_\_\_.  
 a)  $\int_0^1 e^{-x} x^{n-1} dx$  b)  $\int_0^1 e^{-x} x^n dx$  c)  $\int_0^\infty e^x x^{-n} dx$  d)  $\int_0^\infty e^{-x} x^{n-1} dx$
7.  $\int \frac{\log x}{x} dx, x > 0$  is \_\_\_\_\_.  
 a)  $\frac{1}{2}(\log x)^2 + c$  b)  $\frac{-1}{2}(\log x)^2 + c$  c)  $\frac{2}{x^2} + c$  d)  $\frac{-2}{x^2} + c$
8.  $\int \frac{m}{(mx)^2 - a^2} dx =$  \_\_\_\_\_  
 a)  $\frac{1}{2a} \log \left| \frac{mx+a}{mx-a} \right| + c$  b)  $\frac{1}{2a} \log \left| \frac{mx-a}{mx+a} \right| + c$  c)  $\frac{1}{a} \log \left| \frac{mx-a}{mx+a} \right| + c$   
 d)  $\log \left| \frac{mx-a}{mx+a} \right| + c$
9.  $\int m a^{mx+n} dx$  is \_\_\_\_\_.  
 a)  $\frac{a^{mx+n}}{\log n}$  b)  $\frac{1}{\log a} a^{mx+n} + c$  c)  $\frac{1}{\log m} a^{mx+c}$  d) 0
10.  $\frac{d}{dx}(x^3 - \pi)$  is \_\_\_\_\_.  
 a)  $3x^2 + \pi x$  b)  $3x^2 - \pi$  c)  $3x^2$  d)  $\pi x$

II. Answer any 3 of the following: 3x2=6

11. Evaluate:  $\int \frac{5+5e^{2x}}{e^x + e^{-x}} dx$
12. Evaluate  $\int \frac{x}{x^2+1} dx$
13. Integrate:  $\frac{1}{2x^2-9}$
14. Evaluate:  $\int_2^3 \frac{x^4+1}{x^2} dx$

III. Answer any 3 of the following: 3x3=9

15. Evaluate  $\int_1^4 f(x)dx$  where  $f(x) = \begin{cases} 7x+3, & \text{if } 1 \leq x \leq 3 \\ 8x, & \text{if } 3 \leq x \leq 4 \end{cases}$

16. Evaluate  $\int_0^\infty e^{-x^2} dx$

17. Evaluate  $\int_0^{\frac{\pi}{2}} \sqrt{1 + \cos x} dx$

18. Evaluate  $\int \sqrt{4x^2 - 5} dx$

IV. Answer the following: 3x5=15

19. Using the properties of definite integrals,

Evaluate  $\int_0^1 \log \left( \frac{1}{x} - 1 \right) dx$

20. Evaluate the integral as the limit of the sum

i)  $\int_1^2 x^2 dx$

21. Evaluate i)  $\int (\log x)^2 dx$  ii)  $\int \frac{2}{3x+5} dx$

I. Choose the most appropriate synonyms of the underlined word

from the options given below:  $16 \times \frac{1}{2} = 8$

1. As the sun set, Hillary and Tenzing crawled into the tent.

- a) crowded b) rushed c) crept d) grieved

2. .... and with no small peril to herself.

- a) pearl b) walk c) danger d) worry

3. Liberty is not a personal affair only, but a social contract.

- a) hinderance b) concern c) desire d) commitment

Choose the most appropriate antonyms of the underlined word

from the options given below:

4. ....but I have liberty to be indifferent to you.

- a) interested b) insignificant c) different d) freedom

5. We reached its crest.

- a) crown b) edge c) core d) surface

6. I cooked them over the fierce flame of the primus.

- a) violent b) terrible c) wild d) dull

Fill in the blanks with a suitable phrasal verb:

7. We connected up our masks and turned on the valves to bring life

giving oxygen into our lungs.

- a) take lead b) switch off c) to open d) to close

Choose the appropriate compound word for the given

combination:

8. Verb + Adjective

- a) fly high b) clear cut c) free fall d) side walk

Use the correct form of tense to fill in the blanks:

9. Rox would have played with me, if he \_\_\_\_\_ (has) time.

Fill in the blanks with the correct infinitives:

10. Solar energy is used \_\_\_\_\_ for electricity.

Complete the following sentences using the correct article:

11. \_\_\_\_\_ hurricane is a cyclone that forms over the tropical oceans and seas.

Complete the following sentences using appropriate determiners:

12. \_\_\_\_\_ do I know about his personal life.

- a) many b) much c) little d) few

Choose the correct American English word for the given British

English word:

13. The driver turned on the indicator.

- a) spot light b) head light c) torch light d) blinker

Choose the correct option and complete the sentences:

14. Sekar or his brothers \_\_\_ (has / have) done it.

15. To make a promise and then not to keep it \_\_\_\_\_ (is/are)

dishonesty.

16. Choose the word which is not British English:

- a) Odour b) Theater c) Gray d) Behavior

II. Read the following sets of poetic lines and answer the questions

below:  $9 \times 1 = 9$

“You’ve wounded! Way’ his soldier’s pride

Touched to the quick, he said.

17. Why did the boy contradict Napoleon’s words?

18. Why was his pride touched?

‘We French stormed Robinson.

19. Mention the figure of speech in the above line.

‘Life is a soft loam: be gentle; go easy’

And this too might serve him.

20. Why does the poet suggest to take life easy?

21. Identify the figure of speech in the above line.

22. Bring out the meaning of the word 'loam'.

"Yet all experience is an arch where through  
Gleams that untraveled world, whose margin fed  
for ever and for ever when I move.

23. What is experience compared to?

24. How do the lines convey that the experience is endless?

'For always roaming with a hungry hear,

25. Mention the figure of speech in the above given sentence.

III. Explain (any one) with reference to the context of the following

lines: 1x3=3

26. I cannot rest from travel: I will drink

Life to the less'.

27. Yet learning something out of every folly

hoping to repeat none of the cheap follies

28. I'm killed, sire! And, his chief beside,

Smiling, the boy fell dead.

IV. Do as directed: (any two) 2x2=4

Rewrite the following sentences using 'If' without changing the  
meaning:

29. Kavin will not stop flying kites unless he understands the risk  
involved in it.

Combine the sentences using relative pronoun:

30. He was the boy. He won the race.

31. Hurricanes are as dangerous as tornadoes.

(Change into comparative degree)

IV. A) Answer any two of the following briefly: 2x3=6

32. When did Hillary feel a sense of freedom and well being?

33. Define liberty as perceived by A.G.GardineR.

34. Why is there a danger of the world getting 'liberty drunk'?

B) Answer any one of the following in a paragraph of 100-150

words: 1x5=5

35. What is the role of the young soldier in the victory of the French  
at Ralisbon?

36. Write a brief summary of 'The MidNight Visitor'.

37. What do you infer from Gardiner's essay 'On the rule of the  
Road'?

V. Respond to the following advertisement considering yourself

fulfilling the conditions specified: 1x5=5

38.

Software Company requires experienced Male/Female Secretary to M.D Candidates should be graduates with Software knowledge and good command in English.
--

Apply to Box No: Wh55164

C/o The Hindu, Chennai 600 002.

I. Choose the most appropriate synonyms of the underlined word from the options given below: 16x½=8

1. No more humps to tantalize us.  
 a) tease      b) assist      c) encourage      d) repel
  2. Individual liberty would have become social anarchy.  
 a) lawfulness      b) order      c) lawlessness      d) control
  3. The liberties of everybody must be curtailed.  
 a) increased      b) reduced      c) unlimited      d) raised
- Choose the most appropriate antonyms of the underlined word from the options given below:
4. The bottle of oxygen was now exhausted.  
 a) drained      b) dead      c) energized      d) completed
  5. She was walking with no small peril to herself.  
 a) danger      b) safety      c) confusion      d) protection
  6. Be wise or ridiculous.  
 a) foolish      b) comic      c) laughable      d) logical

Fill in the blanks with the right idioms:

7. The conference room was silent though packed. The chairman introduced an interactive session to \_\_\_\_\_.  
 a) the icing on the cake      b) round the corner  
 c) break the ice      d) fetch and carry
- Choose the suitable phrasal verb from the given options:
8. She \_\_\_\_\_ new clothes.  
 a) put in      b) put off      c) put away      d) put on
  9. Choose the suitable option to pair it with the word 'edge' to form a compound word:  
 a) wind      b) knife      c) ice      d) sleeping

Read the following sentence and fill in the blanks:

10. If I \_\_\_\_\_ (be) a spider, I \_\_\_\_\_ (weave) webs.

Use the gerundial form of the verb in the brackets and fill in the blanks:

11. \_\_\_\_\_ (shop) is my favourite hobby.

Complete the following sentence in the underlined space with a correct article:

12. Cyclones are usually accompanied by \_\_\_\_\_ stormy weather.

- a) a      b) an      c) the      d) o

Complete the following sentences using appropriate determiners:

13. I am very tired today, as I had \_\_\_\_\_ guests today.

- a) much      b) many      c) some      d) few

14. Choose the American English word for 'schedule'.

- a) plan      b) agenda      c) timetable      d) planner

Choose the correct option and complete the sentences:

15. Each of these boys \_\_\_\_\_ (has, have) passed.

16. A number of books \_\_\_\_\_ (is, are) missing.

II. Read the following sets of poetic lines and answer the questions below: 3x3=9

“Little remains: but every hour is saved  
 From that eternal silence, something more,  
 A bringer of new things, and vile it were”.

17. How is every hour important to Ulysses?

18. What does the term 'Little remains' convey?

“And drunk delight of battle with my peers”

19. What is the figure of speech used here?

.....Free imaginations

Bringing changes into a world resenting charge.

20. How does free imagination help the world?

21. Identify the figure of speech.

“And this might stand him for the storms”.

22. Pick out the alliterated words from the poetic lines:

“.....as sheathes

A film the mother – eagle’s eye

When her bruised eaglet breathes”

23. Who is compared to the mother eagle in the above lines?

24. Explain the comparison.

25. What is the figure of speech used here?

B) Answer any one of the following with reference to the context:

1x3=3

26. “To see your flag-bird flap his vans

Where I, to heart’s desire,

Perched him!”

27. Yet learning something out of every folly hoping to repeat none of the cheap follies.

28. To strive, to seek, to find and not to yield.

III. Do as directed: (Any two)

2x2=4

Rewrite the following sentences using ‘if’ without changing the meaning:

29. The palace cannot be kept clean, unless we appoint more people.

Combine the sentences using relative pronoun:

30. Nobody knows the power supply will resume.

31. No other planet in our solar system is as cold as Neptune.

(Change into superlative sentence)

IV. A) Answer the following briefly: (Any two)

2x3=6

32. Why was the original zest fading away?

33. What does the ‘rule of the road’ mean?

34. How would ‘liberty’ cause universal chaos?

B) Answer any one of the following in a paragraph of about 100-150

words:

1x5=5

35. What is the role of the young soldier in the victory of the French at Ralisbon?

36. Write a brief summary of ‘The MidNight Visitor’.

37. What do you infer from Gardiner’s essay ‘On the rule of the Road’?

V. Respond to the following advertisement considering yourself fulfilling the conditions specified:

1x5=5

38.

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21.11.19 Comprehensive Revision Programme-2 Marks:40  
Std:XII (F-J) AN Computer Application Time: 1.15 hrs

I. Choose the correct answer: 5x1=5

1. Expand JPEG

- a) Joint Photo Experts Gross
- b) Joint Photographic Experts Group
- c) Joint Processor Experts Group
- d) Joint Photographic Expression Group

2. What will be displayed in a browser when the following PHP code is executed?

```
<?Php
for ($counter=10; $counter<10; $counter=$counter+5)
{
    echo "Hello";
}
?>
```

- a) Hello Hello Hello Hello Hello
- b) Hello Hello Hello
- c) Hello
- d) None of the above

3. \_\_\_\_\_ is a server side scripting language designed for web development.

4. TCP/IP is a combination of two protocols:

- i) Transmission Control Protocol (TCP)
- ii) Internet Protocol (IP)
- iii) Selection Protocol (SP)
- iv) Capital Protocol (CP)

- a) (i), (ii)
- b) (i), (iii)
- c) (iii), (iv)
- d) (ii), (iii)

5. RFID stands for \_\_\_\_\_.

- a) Radio Free identification
- b) Real Frequency Identity
- c) Radio Frequency Indication
- d) Radio Frequency Identification

II. Answer any 5 in short: 5x2=10

Q.No.8 is compulsory

- 6. What is desktop publishing?
- 7. What is text block?
- 8. Define for loop in PHP.
- 9. What is Web Database?
- 10. What is Mysqldatafetch\_assoc() function?
- 11. How many types of RFID system is available and what are they?

III. Answer any 5 in brief: 5x3=15

Q.No.14 is compulsory

- 12. Mention three tools in PageMaker and write their keyboard shortcuts.
  - 13. What is the use of MasterPage?
  - 14. Differentiate for each and while loop.
  - 15. Write the features of Looping structure.
  - 16. Write MySQL connection syntax with example.
  - 17. Write short notes on HTTP, HTTPS, FTP.
  - 18. Compare Internet, Intranet and Extranet.
- IV. Answer any 2 in detail: 2x5=10
- 19. Write the steps to place the text in a frame.
  - 20. Discuss in detail about for each loop.
  - 21. Discuss about OSI model with its layers.

1. According to the rational root theorem which number is not possible rational zero of  $4x^7+2x^4-10x^3-5$ ?  
 a) -1            b)  $\frac{5}{4}$             c)  $\frac{4}{5}$             d) 5
2. If f and g are polynomials of degrees m and n respectively and if  $h(x)=(f \circ g)(x)$ , then the degree of h is \_\_\_\_\_.  
 a) mn            b) m+n            c)  $m^n$             d)  $n^m$
3. The number of positive zeros of the polynomial  $\sum_{r=0}^n nC_r (-1)^r x^r$  is  
 a) 0            b) n            c) <n            d) r
4. The number of real numbers in  $[0, 2\pi]$  satisfying  $\sin^4 x - 2\sin^2 x + 1$  is  
 a) 2            b) 4            c) 1            d)  $\infty$
5. If  $x^3+12x^2+10ax+1999$  definitely has a positive zero if and only if  
 a)  $a \geq 0$             b)  $a > 0$             c)  $a < 0$             d)  $a \leq 0$
6. The circle  $x^2+y^2=4x+8y+5$  intersects the line  $3x-4y=m$  at two distinct points if \_\_\_\_\_.  
 a)  $15 < m < 65$             b)  $35 < m < 85$             c)  $-85 < m < -35$             d)  $-35 < m < 15$
7. If p(x,y) be any point on  $16x^2+25y^2=400$  with foci  $F_1(3,0)$  and  $F_2(-3,0)$  then  $PF_1+PF_2$  is \_\_\_\_\_.  
 a) 8            b) 6            c) 10            d) 12
8. If the coordinates at one end of a diameter of the circle  $x^2+y^2-8x+4y+c=0$  are (11, 2) the coordinates of the other end are  
 a) (-5, 2)            b) (-2, -5)            c) (5, -2)            d) (-2, 5)
9. Area of the greatest rectangle inscribed in the ellipse  $\frac{x^2}{a^2}+\frac{y^2}{b^2}=1$   
 a) 2ab            b) ab            c)  $\sqrt{ab}$             d)  $\frac{a}{b}$
10. The equation of the circle passing through the foci of the ellipse  $\frac{x^2}{16}+\frac{y^2}{9}=1$  having centre (0, 3) is \_\_\_\_\_.  
 a)  $x^2+y^2-6y-7=0$             b)  $x^2+y^2-6y+7=0$             c)  $x^2+y^2-6y-5=0$   
 d)  $x^2+y^2-6y+5=0$

II. Answer any 3 of the following: 3x2=6

11. If the equations  $x^2+px+q=0$  and  $x^2+p^1x+q^1=0$  have a common root, show that it must be equal to  $\frac{pq^1-p^1q}{q-q^1}$  or  $\frac{q-q^1}{p^1-p}$
12. Find a polynomial equation of minimum degree with rational coefficients having  $(2i+3)$  as a root.

13. Find the centre and radius of the circle  $x^2+y^2-x+2y-3=0$
  14. If the normal at the point 't<sub>1</sub>' on the parabola  $y^2=4ax$  meets the parabola again at the point t<sub>2</sub>, then prove that  $t_2 = -\left(t_1 + \frac{2}{t_1}\right)$
- III. Answer any 3 of the following: 3x3=9
15. Solve the equation  $3x^3-16x^2+23x-6=0$  if the product of two roots is 1.
  16. Solve:  $8x^{\frac{3}{2n}}-8x^{\frac{-3}{2n}} = 63$
  17. If  $y=2\sqrt{2}x+c$  is a tangent to the circle  $x^2+y^2=16$ , find the value of c
  18. Find the equations of tangents to the hyperbola  $\frac{x^2}{16}-\frac{y^2}{64}=1$  which are parallel to  $10x-3y+9=0$ .
- IV. Answer any 3 of the following: 3x5=15
19. At a water fountain, water attains a maximum height of 4m at horizontal distance of 0.5m from its origin. If the path of water is a parabola, find the height of water at a horizontal distance of 0.75m from the point of origin.
  20. For the ellipse  $4x^2+y^2+24x-2y+21=0$ , find the centre, vertices and the foci. Also prove that the length of latus rectum is 2.
  21. Solve the equation  $6x^4-5x^3-38x^2-5x+6=0$  if it is known that  $\frac{1}{3}$  is a solution.
  22. If the roots of  $x^3+px^2+qx+r=0$  are in H.P. Prove that  $9pqr=27r^3+2p$ . Assume p,q,r $\neq$ 0.

I. Choose the correct answer:

5x1=5

- Delegation of authority is easily done with the help of \_\_\_\_\_.  
a) MBM      b) MBE      c) MBO      d) MBA
- There are \_\_\_\_\_ stock exchanges in the country.  
a) 21      b) 25      c) 20      d) 24
- One who promotes (or) exchange of goods or services for money is called as \_\_\_\_\_.  
a) marketer    b) manager    c) customer    d) seller
- \_\_\_\_\_ is the Government of India's endeavour to promote culture of innovation and entrepreneurship.  
a) STEP      b) AIC      c) SEED      d) AIM
- How does a person who envisages the idea to form a company called?  
a) Director    b) Company Secretary    c) Registrar  
d) Promoter

II. Answer any 5 from the following:

5x2=10

- What do you understand by preference share?
- Mention the time period of provision registration certificate.
- Define marketer.
- Define Stock Exchange.
- What is known as KRA?
- What do you mean by sweat equity shares?

III. Answer any 5 from the following:

5x3=15

- Explain different kinds of preference shares.
  - Expand the following:  
STEP, JAM, TREAD, M-SIPS, SEED and New Gen IEDC.
  - Why customer support is needed to market?
  - Explain National Stock Exchange (NSE).
  - Write the features of MBO.
  - What do you understand by issue of securities at premium?
- IV. Answer any 2 from the following:
- 2x5=10
- Write the difference between debentures and shares.
  - Explain any five Government Entrepreneurial schemes.
  - How can market can be classified?

I. Choose the correct answer:

5x1=5

- The technology used for stopping the brain from processing pain is \_\_\_\_\_.  
a) Precision medicine      b) Wireless brain sensor  
c) Virtual reality      d) Radiology
- The gravitational waves were theoretically proposed by \_\_\_\_\_.  
a) Conrad Rontgen      b) Marie Curie  
c) Albert Einstein      d) Edward Purell
- "Sky wax" is an application of nano product in the field of \_\_\_\_\_.  
a) Medicine    b) Textile    c) Sports    d) Automotive industry
- A circular coil of radius 5cm has 50 turns carries a current of 3 ampere. The magnetic dipole moment of the coil is \_\_\_\_\_.  
a) 1.0 amp-m<sup>2</sup>      b) 1.2 amp-m<sup>2</sup>      c) 0.5 amp-m<sup>2</sup>  
d) 0.8 amp-m<sup>2</sup>

5. A wire of length  $l$  carries a current  $I$  along the  $y$  direction and magnetic field is given by  $\vec{B} = \frac{\beta}{\sqrt{3}}(\hat{i} + \hat{j} + \hat{k})T$ . The magnitude of Lorentz force acting on the wire is \_\_\_\_\_.

- a)  $\sqrt{\frac{2}{3}} \beta I l$       b)  $\sqrt{\frac{1}{3}} \beta I l$       c)  $\sqrt{2} \beta I l$       d)  $\sqrt{\frac{1}{2}} \beta I l$

II. Answer any 5 of the following:

5x2=10

- Mention any 4 advantages of Robotics.
  - Write a short note on Artificial Intelligence.
  - State Biot-Savart law.
  - Define Tangent law.
  - What are the limitations of cyclotron?
  - State the properties of magnets.
- III. Answer any 5 of the following:
- 5x3=15
- Explain Magnetic Lorentz force.
  - Explain the conversion of galvanometer into ammeter.
  - Deduce the expression for magnetic dipole moment of revolving electron around the nucleus in a circular orbit.
  - Compute the torque experienced by a magnetic needle in a uniform magnetic field.
  - Write a short note on: i) Virtual Reality ii) Robotic Surgery
  - Compare dia, para and ferro magnetism.

IV. Answer any 2 of the following:

2x5=10

- Obtain the magnetic induction at a point on the equatorial line of a bar magnet.
- Discuss the construction and working of cyclotron.
- Obtain an relation for the magnetic induction at a point along the axis of a circular coil carrying current.

- I. Choose the correct Answers: 5x1=5
1. The average propensity to consume is measured by  
a. C/Y      b. CXY      c. Y/C      d. C+Y
  2. The Sum of the MPC & MPS is \_\_\_\_\_.  
a. 1      b. 2      c. 0.1      d. 1.1
  3. When prices rise slowly, we call it  
a. galloping inflation      b. mild inflation  
c. deflation      d. hyper inflation
  4. Moral suasion refers  
a. Optimization      b. maximization  
c. persuasion      d. minimization
  5. Central bank is \_\_\_\_\_ authority of any country.  
a. Monetary      b. Fiscal      c. wage      d. National Income
- II. Answer any 5 of the following: 5x2=10
6. Define Central bank.
  7. What is rationing of credit?
  8. What is Commodity Money?
  9. What is gold standard?
  10. What do you mean by propensity to consume?
  11. Define average propensity to save (APS).
- III. Answer any 5 of the following: 5x3=15
12. State the propositions of Keynes's psychological law of consumption.
  13. Differentiate autonomous & induced investment.
  14. What are the determinants of money supply?
  15. Explain disinflation.
  16. Bring out the methods of credit control.
  17. Mention the objectives of demonetizations.
- IV. Answer any 2 of the following: 2x5=10
18. Explain the operation of the Accelerator.
  19. Illustrate Fisher's Quantity theory of money.
  20. Elucidate the functions of commercial banks.