CLASS – XI
MATHEMATICS

[Q.1] Let S = {0,1,5,4,7}. Then the total number of subsets of S is

(a) 64 (b) 32

(c) 40 (d) 20

ANS - B

[Q.2] Let A and B be two sets such that n(A) = 0.16, n(B) = 0.14, n(A $\cup$ B) = 0.25. Then $n(A \cap B)$ is equal to

(a) 0.3 (b) 0.5

(c) 0.05 (d) None of these

ANS - C

[Q.3] If $\sin\theta + \cos ec\theta = 2,$ the value of $\sin^{10}\theta$ + $cosec^{10}\theta$ is

(a) 10 (b) 2^{10}

(c) 2^9 (d) 2

ANS - D

[Q.4] $\cos 1^0 + \cos 2^0 + \cos 3^0 + \ldots\ldots\ldots + \cos 180^0$ =

(a) 0 (b) 1

(c) -1 (d) 2

ANS – C

[Q.5] The value of $\cos(270^0 + \theta)\cos(90^0 + \theta) - \sin(270^0 - \theta)\cos\theta$ is

(a) 0 (b) -1

(c) ½ (d) 1

ANS - D

[Q.6] $\sin 50^0 - \sin 70^0 + \sin 10^0$ =

(a) 1 (b) 0

(c) ½ (d) 2

ANS - B

[Q.7] If $\left(\frac{1+i}{1-i}\right)^m = 1,$ then the least integral value of m is

(a) 2 (b) 4

(c) 8 (d) None of these

ANS - B

[Q.8] If $(x+iy)^{1/3} = a + ib,$ then $\frac{x}{a} + \frac{y}{b}$ is equal to

(a) $4(a^2 + b^2)$ (b) $4(a^2 - b^2)$

(c) $4(b^2 - a^2)$ (d) None of these

ANS – C

[Q.9] If α and β are the roots of the equation $x^2 - 4x + 1 = 0$ the value of $\alpha^3 + \beta^3$ is

(a) 76 (b) 52

(c) -52 (d) -76

ANS - B

[Q.10] If the p^{th} term of an A.P. be $\frac{1}{q}$ and q^{th} term be $\frac{1}{p}$, then the sum of its pq^{th} terms will be

(a) $\frac{pq-1}{2}$ (b) $\frac{1-pq}{2}$

(c) $\frac{pq-1}{2}$ (d) $-\frac{pq+1}{2}$

ANS – A

[Q.11] In how many ways can 5 boys and 5 girls sit in a circle so that no two boys sit together

(a) 5! X 5! (b) 4! X 5!

(c) $\frac{5! \times 5!}{2}$ (d) None of these

ANS - B

[Q.12] ${}^nC_r \div {}^nC_{r-1}$ =

(a) $\frac{n-r}{r}$ (b) $\frac{n+r-1}{r}$

(c) $\frac{n-r+1}{r}$ (d) $\frac{n-r-1}{r}$

ANS – A

[Q.13] If the coefficients of x^7 in the expansion of $\left(\frac{x^2}{2} - \frac{2}{x}\right)^8$ is

(a) -56 (b) 56

(c) -14 (d) 14

ANS - C

[Q.14] The ratio in which x-axis divides the join the points (2, -3) and (5, 6) is

(a) 2 : 1 (b) 1 : 2

(c) 2 : -1 (d) None of these

ANS - B

[Q.15] Slope of a line which cuts intercepts of equal lengths on the axes is

(a) -1 (b) 0

(c) 2 (d) $\sqrt{3}$

ANS – A

[Q.16] Three coins are tossed together, then the probability of getting at least one head is

(a) $\frac{1}{2}$ (b) $\frac{3}{4}$

(c) $\frac{1}{8}$ (d) $\frac{7}{8}$

ANS - D

[Q.17] The probability that a leap year will have 53 Fridays or 53 Saturdays is

(a) $\frac{2}{7}$ (b) $\frac{3}{7}$

(c) $\frac{4}{7}$ (d) $\frac{1}{7}$

ANS - B

[Q.18] The probability that a leap year selected randomly will have 53 Sundays is

(a) $\frac{1}{7}$ (b) $\frac{2}{7}$

(c) $\frac{4}{53}$ (d) $\frac{4}{49}$

ANS - B

[Q.19] $\lim_{x\to 0}\frac{\sin mx}{\tan nx} =$

(a) $\frac{n}{m}$ (b) $\frac{m}{n}$

(c) mn (d) None of these

ANS - B

[Q.20] $\lim_{x\to 0}\frac{x}{\tan x}$ is equal to

(a) 0 (b) 1

(c) 4 (d)Not defined

ANS - B

GENERAL KNOWLEDGE

[Q.1] Which of the following statement is not true about the Indian National Congress?

(a) It was formed in 1885

(b) W.C Bannerjee was the first president of congress

(c) It was formed when 72 delegates from all the presidencies and provinces of India met at Bombay

(d) Its founder, Allan Octavian Hume, was a retired British professor in India

ANS - D

[Q.2] Bhagat Singh was executed in which of the following case:

(a) Lahore conspiracy case

(b) Central Assembly bomb case

(c) Kakori case

(d) Dalhousie square bomb case

ANS - B

[Q.3] Who was the political Guru of Mahatma Gandhi Ji?

(a) Gopal Krishna Gokhale

(b) Dayanand Saraswati

(c) Ravindra Nath Tagore

(d) None of the above

ANS - A

[Q.4] Which of the following geographical term related to a body of land surrounded by water on three sides?

(a) Peninsula

(b) Gulf

(c) Strait

(d) Island

ANS - A

[Q.5] Which of the following States has the longest coastline?

(a) Goa

(b) Gujarat

(c) Andhra Pradesh

(d) Kerala

ANS - B

[Q.6] Which of the following was included as part of the land reforms initiated in India?

(a) Abolition of intermediaries

(b) Tenancy reforms

(c) Reorganization of agriculture

(d) All the above

ANS - D

[Q.7] Consider the statement (s) related to the green revolution.

1. Excess land was acquired by the government and redistributed among the landless
2. Ceiling laws were passed in all the states during the 1st FYP period

Which of the following is/are correct statement (s)?

(a) Only 1

(b) Only 2

(c) Both 1 and 2

(d) Neither 1 nor 2

ANS - C

[Q.8] Which of the following rivers do not discharge its water into the Bay of Bengal?

(a) Mahanadi

(b) Cauvery

(c) Tapti

(d) Godavari

ANS - C

[Q.9] Name an antiviral medicine used for a clinical trial by Gilead Sciences for COVID-19 treatment?

(a) Favipiravir

(b) Triazavirin

(c) Remdesivir

(d) None of the above

ANS - C

[Q.10] What is the correct decreasing order of the officers in the Indian Army?

(a) Field marshal, General, Lieutenant General and Major General

(b) General, Field marshal, Lieutenant General and Major General

(c) General, Lieutenant General, Major General and field marshal

(d) General, Field marshal, Lieutenant General and Major General

ANS - A

ENGLISH

[Q.1] Select the correct part of speech of the highlighted word

She works very Carefully

(a) Adjective (b) Adverb

(c) Verb (d) Article

ANS - B

[Q.2] Select the correct part of speech of the highlighted word

Sanaya has a very lovely dog.

(a) Determiner (b) Adjective

(c) Adverb (d) Noun

ANS - B

[Q.3] Choose the correct option

I'd like to go __ in the park.

(a) to walking (b) for walk

(c) for a walk (d) to walk

ANS - C

[Q.4] Choose the correct meaning of the given idiom

Those were only crocodile tears.

(a) Very gloomy (b) Mild regret

(c) Pretended sadness (d) A weeping sign

ANS - C

[Q.5] Choose the correct option

We couldn't find a taxi, __ we walked home.

(a) So (b) Because

(c) But (d) Although

ANS - A

[Q.6] Choose the correct synonym of the given word:

Rigid

(a) Solid (b) Bent

(c) Hard (d) Sticky

ANS - C

[Q.7] Choose the correct antonym of the given word.

ENORMOUS

(a) Soft (b) Average

(c) Tiny (d) Weak

ANS - C

[Q.8] Choose the correct option

'How old __?' 'I __ .'

(a) Are you / am 20 years old.

(b) Have you / have 20 years old

(c) Are you / am 20 years.

(d) Do you have / have 20 years.

ANS - A

[Q.9] Choose the correct option

'___ to the cinema tomorrow'?

(a) We will go (b) Do we go

(c) We go (d) Shall we go

ANS - D

[Q.10] She is __ her sister, I think.

(a) More happier than (b) More happy that

(c) Happier that (d) Happier than

ANS - D

CHEMISTRY

[Q.1] In nuclear reactors, heavy water is used as

(a) as coolant

(b) as a moderator

(c) both as moderator and coolant

(d) neither moderator nor coolant

ANS - B

[Q.2] Which of then will not be oxidized by ozone ?

(a) KI (b) $FeSO_4$

(c) $KMnO_4$ (d) $K2MnO_4$

ANS - C

[Q.3] Which colour is given by calcium in flame test ?

(a) Red (b) White

(c) Green (d) Pink

ANS - A

[Q.4] Which of the following is not acidic ?

(a) PCl_3 (b) $SbCl_3$

(c) $BiCl_3$ (d) CCl_4

ANS – D

[Q.5] Which of the following is weakest lew is base ?

(a) H^- (b) OH^-

(c) Cl^- (d) HCO_3^-

ANS - A

PHYSICS

[Q.1] Which of the following pairs has the same dimensions?

(a) Specific heat and latent heat

(b) Impulse and momentum

(c) Surface tension and force

(d) Moment of inertia and torque

ANS - B

[Q.2] A 180 meter long train is moving due north at a speed of 25 m/s. A small bird is flying due south, a little above the train, with a speed of 5m/s. The time taken by the bird to cross the train is

(a) 10 s (b) 12 s

(c) 9 s (d) 6 s

ANS - D

[Q.3] Two bullets are fired simultaneously horizontally and with different speeds from the same place. Which bullet will hit the ground first?

(a) The slower one

(b) The faster one

(c) Both will reach simultaneously

(d) depends on the masses

ANS - C

[Q.4] A uniform chain of length 2 m is kept on a table such that a length of 60 cm hangs freely from the edge of the table. The total mass of the chain is 4 kg. What is the work done in pulling the entire chain on the table?

(a) 7.2 J (b) 3.6 J

(c) 120 J (d) 1200 J

ANS - B

[Q.5] A artificial satellite moving in a circular orbit around the earth has a total (Kinetic + potential) energy -E. Its potential energy is

(a) -2E (b) E

(c) 1.5E (d) -E

ANS - A