

HSEE – 2019

Question Paper Humanities & Social Sciences Entrance Examination-2019 Indian Institute of Technology Madras

PART – I (Objective Type: Online): HSEE-2019 has 128 questions carrying 144 marks in total spread over SIX sections and time allocated is 150 minutes (from 10:00 AM to 12:30 PM).

- **Section 1:** English and Comprehension Skill (32 questions)
- **Section 2:** Analytical & Quantitative Ability (32 questions)
- **Section 3a:** General Studies – Indian Economy (16 questions)
- **Section 3b:** General Studies – Indian Society and Culture (16 questions)
- **Section 3c:** General Studies – World Affairs (16 questions)
- **Section 3d:** General Studies – Environment and Ecology (16 questions)

For each question there are four options provided as possible answers.

For a questions carrying 1 mark: only one of the options is the correct answer. No negative marking.

For a question carrying 2 marks: one option or more option(s) is/are correct answer(s). Full 2 marks will be awarded for a complete answer. No partial marking for partial answer. No negative marking.

PART – II (Essay Type: Offline): The time allocated for this test is 30 minutes (from 12:30 PM and 1:00 PM). You will be given some topics, out of which you are required to select any one topic and write an essay (approximately 300 words) in the answer sheet provided

HSEE-2019 PART – I (Objective Type)
Section 1: English and Comprehension Skill

Read the following poem by e. e. cummings and answer the subsequent five questions. (Note: e. e. cummings follows the conventions of using the lower case alone in all his poems.) (The questions carry 1 mark each.)

maggie and milly and molly and may	1
went down to the beach (to play one day)	2
and maggie discovered a shell that sang	3
so sweetly she couldn't remember her troubles, and	4
milly befriended a stranded star	5
whose rays five languid fingers were;	6
and molly was chased by a horrible thing	7
which raced sideways while blowing bubbles:and	8
may came home with a smooth round stone	9
as small as a world and as large as alone	10
For whatever we lose (like a you or me)	11
it's always ourselves we find in the sea	12

Q.1 What effect did the shell have on Maggie?
(1 mark)

- [A] It played sweet music to Maggie which prophesied the future.
- [B] It created a new world for Maggie that was full of dissonance.
- [C] It made Maggie think of her troubles again.
- [D] It reassured Maggie and quietened her anxiety.

Q.2 What is Molly's state of mind after "being chased by a horrible thing"?
(1 mark)

- [A] She enjoys encountering strange creatures.
- [B] She loves playing in the beach sands.
- [C] She is terrified of the creature's movement on the sands.
- [D] She is amused by the creature's capacity to blow bubbles.

Q.3 What poetic device has been used in line 2 ("to play one day") of the poem?
(1 mark)

- [A] assonance
- [B] alliteration
- [C] imagery
- [D] onomatopoeia

Q.4 What is the theme of the poem? (1 mark)

[A] Individual identity and how it evolves
[B] A day at the beach and how enjoyable it was
[C] Friendship and how it can be a stressful experience
[D] Existential agony and how it can affect individuals

Q.5 What figure of speech is used in line 6 ('whose rays five languid fingers were;')? (1 mark)

[A] synecdoche
[B] hyperbole
[C] metonymy
[D] metaphor

Q.6 **Fill in the blank with the most appropriate option.**
The fare provided for the dinner was so sumptuous that many of the guests decided to _____. (1 mark)

[A] skip out
[B] fill up
[C] pig out
[D] feed up

Q.7 **Fill in the blank with the most appropriate option.**
The speaker's _____ on an abstruse topic was rather sketchy leaving the students confused. (1 mark)

[A] adumbration
[B] disputation
[C] identification
[D] diatribe

Q.8 **Fill in the blank with the most appropriate option.**
One of the _____ members was reprimanded by the boss for his offensive behaviour in the meeting. (1 mark)

[A] primitive
[B] bumptious
[C] reticent
[D] sanguine

Q.9 Choose the most appropriate antonym for the capitalized word.
The old clock is now in good repair, thanks to the SEDULOUS efforts of the watch repairer.

(1 mark)

- [A] tireless
- [B] thorough
- [C] shoddy
- [D] unceasing

Q.10 Choose the most appropriate antonym for the capitalized word.
The new proposal fell through owing to the PERFUNCTORY reception from the members of the committee.

(1 mark)

- [A] half-hearted
- [B] luke warm
- [C] meagre
- [D] fervent

Q.11 Pick out the sentence that is grammatically correct.

(1 mark)

- [A] One is not able to understand Iago's motive for his villainy.
- [B] Iago's motivation for ruining Othello's marriage is unknown.
- [C] Iago's villainy is beyond the comprehension.
- [D] One of the major reason for Iago's villainy is jealousy.

Q.12 Pick out the sentence that is grammatically correct.

(1 mark)

- [A] The woman delivered a baby weight five kilograms.
- [B] The woman was delivered of a male child.
- [C] Neither the student nor the teacher were interested in the class.
- [D] Advertisements help in the sale of products.

Q.13 Pick out the sentence that is grammatically correct.

(1 mark)

- [A] I am so hardly tired, I can keep my eyes open.
- [B] I am so tired, I can keep hardly my eyes open.
- [C] I am so tired, hardly I can keep my eyes open.
- [D] I am so tired, I can hardly keep my eyes open.

Q.14 Pick out the sentence that is grammatically correct.

(1 mark)

- [A] John and myself are good friends.
- [B] John and I are good friends.
- [C] Each lady and each gentleman is eligible to dance on the stage.
- [D] Each lady and each gentleman are eligible to dance on the stage.

- Q.15** Pick out the sentence that is grammatically correct (1 mark)
- [A] There is a misunderstanding among Raj and me.
 - [B] It is better not to have played at all than to have played and lost.
 - [C] I invite you to my daughter's wedding with Peter.
 - [D] The employee was asked to put his sign opposite to his name.

- Q.16** Fill in the blank with the most appropriate question tag.
Kumar has finished his assignment, _____ (1 mark)
- [A] has he?
 - [B] isn't it?
 - [C] doesn't he?
 - [D] hasn't he?

- Q.17** Use appropriate articles where necessary to fill in the blank(s).
My wife is in _____ hospital and I misplaced my umbrella in _____ hospital when I went to see her. (1 mark)
- [A] the, the
 - [B] a, a
 - [C] ___(no article), ___(no article)
 - [D] ___(no article), the

- Q.18** Use appropriate articles where necessary to fill in the blank(s).
_____ gypsies have their own language and also _____ wonderful tradition of craftsmanship. (1 mark)
- [A] ___(no article), the
 - [B] The, a
 - [C] The, the
 - [D] ___(no article), ___(no article)

- Q.19** Choose the most appropriate reported speech for the following.
"Is that the laundry?" an angry female voice said to John. (1 mark)
- [A] An angry female voice asked John if that is the laundry.
 - [B] An angry female voice said John whether that is the laundry.
 - [C] An angry female voice asked to John if that was the laundry.
 - [D] An angry female voice asked John if that was the laundry.

Q.20 Choose the most appropriate reported speech for the following.
"Speak louder, please", Harry said to Stephany. (1 mark)

- [A] Harry requested Stephany to speak louder.
- [B] Stephany asked Harry please speak louder.
- [C] Harry requested Stephany please speak louder.
- [D] Harry ordered Stephany to speak louder.

Q.21 Fill in the blank with the most appropriate option.
The weather is very pleasant today, I hope it keeps _____. (1 mark)

- [A] in
- [B] by
- [C] up
- [D] on

Q.22 Fill in the blank with the most appropriate option.
She decided to do _____ her house before it fell into disuse. (1 mark)

- [A] over
- [B] up
- [C] in
- [D] down

Q.23 Fill in the blank with the most appropriate option.
Dr. James Hook is an expert _____ tropical diseases. (1 mark)

- [A] of
- [B] at
- [C] in
- [D] for

Q.24 Fill in the blank with the most appropriate option.
He has not seen his sister _____ a long time. (1 mark)

- [A] since
- [B] for
- [C] almost
- [D] only

Q.25 Choose the most appropriate option that conveys the meaning of the capitalized words.

In the first year of college Ram and Vijay were close friends; by the third year they had GROWN APART.

(1 mark)

- [A] achieved something big
- [B] ended the friendship
- [C] grown old together
- [D] created confusion

Q.26 Choose the most appropriate option that conveys the meaning of the capitalized words.

By the time this traffic jam clears, we will be PUSHING THE DAISIES.

(1 mark)

- [A] dead
- [B] old
- [C] missing dinner
- [D] reprimanded

Q.27 Choose the most appropriate option that conveys the meaning of the capitalized words.

Leaders are trying to SQUARE THE CIRCLE when they claim that they can provide a kilo of rice for a rupee for everyone.

(1 mark)

- [A] solve an impossible problem
- [B] make tall promises
- [C] hoodwink people
- [D] hard sell their policies

Q.28 The sequence of the four sentences (i.e. 1 then 2 then 3 then 4) given below is **NOT** correct.

(Sentence 1): Students should therefore observe these peculiar usages.

(Sentence 2): Some while speaking say, 'it's one of them days'; in writing they prefer, 'it's one of those days'.

(Sentence 3): To write like other literate people, they should learn to follow Standard English.

(Sentence 4): Though annoying, quirks of language are real and probably problematic.

The correct sequence of the sentences is (1 mark)

- [A] 4 then 2 then 1 then 3
- [B] 3 then 2 then 4 then 1
- [C] 2 then 4 then 1 then 3
- [D] 2 then 1 then 3 then 4

Read the following passage and answer the subsequent four questions. (The questions carry 2 marks each)

“I just don’t think you have enough AIDS to get treatment.” “I think we’ll wait to begin your chemo until you have cancer.” “Your Ebola isn’t advanced enough for us to do anything about it. Go home, rest up and when it gets worse give us a call.”

They all sound ridiculous, don’t they? If you’d never tell someone their illness is only symptomatic, why make those mental illnesses feel as though they aren’t sick enough for treatment?

The idea that we must be *more* ill to seek help pervades the minds of so many of us with mental illnesses. I battled it myself for years before finally capitulating. People I respect have quietly admitted feeling guilty for taking their pills or seeing a therapist. The idea of not being sick enough to warrant treatment runs concurrent to feeling as though we should be able to handle it ourselves.

Despite knowing on a cognitive level what mental illness is, the illness itself often poisons our mind and keeps us from seeking the help we need. People diagnosed with mental illnesses live significantly shorter lives than those without. Knowing that, we should be making it easier for people to seek treatment, not significantly more difficult.

I don’t mean to imply that medical professionals slide us into the back burner, though I’m sure it happens. Minimizing our own mental maladies is a self-inflicted wound, a brutal act we’ve practised to perfection. Because we’ve been conditioned to treat what we can see, our mental illnesses become low priority, below even the mundane like yearly dental exams or physicals.

We can’t see it so it doesn’t exist. There isn’t a definitive, easy test for mental illness. I can’t go the doctor and ask her to give me a test for my depression as if I had a virus or infection. We can’t do a body scan and identify the mass that is responsible for a person’s anxiety. Because these illnesses can’t be identified in the traditional sense, we often feel as though we’re making them up, that they are phantoms.

Q.29 This question carries 2 marks. One option or more options is/are correct answer(s) to this question.

We should make it easier for people with mental illnesses to seek treatment because

(2 marks)

- [A] Mental illness is not a serious health problem.
- [B] The illness itself prevents us from seeking medical help.
- [C] The illness is felt only at the cognitive level, not at the physical level.
- [D] Such patients are used to asking for help only when the symptoms of the illness are visible.

Q.30 This question carries 2 marks. One option or more options is/are correct answer(s) to this question.

Mental illnesses are considered 'phantoms' because

(2 marks)

- [A] They can't be identified by traditional means.
- [B] Patients are made to feel that they are 'making them up.'
- [C] Definitive and easy diagnostic tests are not available.
- [D] A person's anxiety cannot be seen as a 'physical mass.'

Q.31 This question carries 2 marks. One option or more options is/are correct answer(s) to this question.

The word 'mundane' means

(2 marks)

- [A] taxing
- [B] dull
- [C] unexciting
- [D] risky

Q.32 This question carries 2 marks. One option or more options is/are correct answer(s) to this question.

The word 'capitulating' means

(2 marks)

- [A] ending
- [B] give in
- [C] evaluating
- [D] surrendering

Section 2: Analytical and Quantitative Ability

Q.33 The number of zeros at the end of 99! (factorial 99) is (1 mark)

- [A] 2
- [B] 12
- [C] 22
- [D] 32

Q.34 $1 + 2^2 + 2^4 + 2^6 + \dots + 2^{48} =$ (1 mark)

- [A] $2^{49} - 1$
- [B] $(2^{49} - 1)/3$
- [C] $2^{50} - 1$
- [D] $(2^{50} - 1)/3$

Q.35 $\left(1 - \frac{1}{2}\right)\left(1 - \frac{1}{3}\right)\left(1 - \frac{1}{4}\right) \dots \left(1 - \frac{1}{1000}\right) =$ (1 mark)

- [A] 0.0001
- [B] 0.001
- [C] 0.01
- [D] 0.1

Q.36 If the difference between two specific numbers is 12, the LCM of the two numbers is 63 and the HCF of the two numbers is 3, then the sum of the two numbers is (1 mark)

- [A] 30
- [B] 25
- [C] 15
- [D] 45

Q.37 Five different alarm clocks ring their alarms at every 15 minutes, 30 minutes, 45 minutes, 1 hour, and 75 minutes, respectively. If all the alarms are rung together now, then how many more times all the clocks ring together again in the next 48 hours? (1 mark)

- [A] 2
- [B] 3
- [C] 4
- [D] 5

Q.38 The HCF of $(2^{99} - 1)$ and $(2^{12} - 1)$ is (1 mark)

- [A] 4095
- [B] 127
- [C] 15
- [D] 7

Q.39 The LCM of $(x^2 - 4)$ and $(x^2 + x - 6)$ is (1 mark)

- [A] $x^3 + 3x^2 - 4x - 12$
- [B] $x^4 + x^3 - 10x^2 - 4x + 24$
- [C] $2x^2 + x - 10$
- [D] $x - 2$

Q.40 In 2019, the average age of Eric, Phillip, and Naveen is 30 years. In 2024, the average age of Eric and Phillip will be 33 years. The age of Naveen in 2019 is (1 mark)

- [A] 24 years
- [B] 29 years
- [C] 34 years
- [D] 39 years

Q.41 Let a_1, a_2, \dots, a_5 and b_1, b_2, \dots, b_5 are two sets of consecutive positive numbers. The average of a_1, a_2, \dots, a_5 is 2 less than the average of b_1, b_2, \dots, b_5 . How many numbers are common between the sets a_1, a_2, \dots, a_5 and b_1, b_2, \dots, b_5 ? (1 mark)

- [A] 0
- [B] 1
- [C] 2
- [D] 3

Q.42 If $p : q = 2 : 3$ and $q : r = 9 : 8$, then $\frac{p}{\sqrt{p^2+r^2}} =$ (1 mark)

- [A] $\frac{3}{5}$
- [B] $\frac{1}{3}$
- [C] $\frac{2}{5}$
- [D] $\frac{2}{3}$

- Q.43** The number of boys in a class is 25 more than the number of girls and the ratio of boys to girls is 3:2. The total number of students in the class is
(1 mark)
- [A] 75
[B] 100
[C] 125
[D] 150
- Q.44** The sides of a right-angled triangle are in the ratio 3:4:5 and the area of the triangle is 96 cm^2 . The length of the largest side of the triangle is
(1 mark)
- [A] 16 cm
[B] 20 cm
[C] 24 cm
[D] 12 cm
- Q.45** Alvin sold an item to Brandon at a profit of 20% and Brandon sold the same to Christopher at a profit of 15%. If Brandon obtained a profit of Rupees 72, then the profit obtained by Alvin is
(1 mark)
- [A] Rupees 96
[B] Rupees 88
[C] Rupees 80
[D] Rupees 72
- Q.46** By using a false weight, an unfair shopkeeper sells all his goods at cost price and still obtains 25% profit. The actual weight of the 1 kg used by the shopkeeper is
(1 mark)
- [A] 750 g
[B] 800 g
[C] 850 g
[D] 900 g
- Q.47** Assume that the length of a rectangle is increased by 25% and the width is decreased by $x\%$ such that there is no change in the area of the rectangle. The value of x is
(1 mark)
- [A] 4
[B] 25
[C] 12.5
[D] 20

- Q.48** Consider three persons Amar, Akbar, and Anthony. Amar can complete a task in 40 days and Akbar in 60 days. If all three work together, they can complete the task in 16 days. If Anthony works alone, then he will be able to complete the task in
- (1 mark)
- [A] 50 days
[B] 48 days
[C] 46 days
[D] 44 days
- Q.49** A team of N persons can complete a task in 24 days. After 6 days of working together by the team of N persons, another 6 persons join them and these N+6 persons complete the remaining part of the task in the next 12 days. If all are equally capable then the value of N is
- (1 mark)
- [A] 6
[B] 12
[C] 18
[D] 24
- Q.50** Six years ago, the age of Ally was 4 times that of Bally, and the age of Cally was 2 times that of Bally. If the present age of Ally is 1.5 times the present age of Cally, then the present age of Bally is
- (1 mark)
- [A] 3 years
[B] 12 years
[C] 6 years
[D] 9 years
- Q.51** The age proportion of a trio of grandfather, father, and son at present is 5:3:1 and the age gap between the father and son is 20 years. The age proportion of the trio will become 3:2:1 after
- (1 mark)
- [A] 5 years
[B] 10 years
[C] 15 years
[D] 20 years
- Q.52** The rate of interest in a saving account is 10% per annum, compounded annually. The total amount of interest earned, by this compound interest scheme, after 2 years is
- (1 mark)
- [A] 0.11 times of the principal amount.
[B] 0.21 times of the principal amount.
[C] 0.31 times of the principal amount.
[D] 0.41 times of the principal amount.

Q.53 A particular sect has a population of 32,768. Each year, the population is reduced by 75%. The population at the end of 7 years will be (1 mark)

- [A] 2
- [B] 16
- [C] 32
- [D] 64

Q.54 Consider 100 positive integers, x_1, x_2, \dots, x_{100} , such that $x_1 - x_2 = 1$, $x_2 - x_3 = 2$, $x_3 - x_4 = 3$, ... $x_{99} - x_{100} = 99$. If $x_{100} = 100$, then the value of x_1 is (1 mark)

- [A] 1
- [B] 1050
- [C] 4050
- [D] 5050

Q.55 $\sin(30^\circ) + \cos(60^\circ) =$ (1 mark)

- [A] $\sqrt{3}$
- [B] 1
- [C] $\sqrt{2}$
- [D] $2\sqrt{3}$

Q.56 In certain coding pattern, if APPLE is NCCBR, then ORANGE is (1 mark)

- [A] DENAVR
- [B] BENATR
- [C] DENATR
- [D] BENA VR

Q.57 Fill in the blank with the correct option that represents the correct pattern in the sequence given below.

ECG; JHL; OMQ; _____

- [A] SQU
- [B] XVZ
- [C] TRV
- [D] DBF

(1 mark)

- Q.58** The total number of squares in an 8x8 chess board is (1 mark)
- [A] 64
[B] 144
[C] 184
[D] 204
- Q.59** Consider a sequence of numbers i.e. 3, 8, 24, 48, 120, 168, 288,-----.
The number that comes immediately after 288 is (1 mark)
- [A] 456
[B] 336
[C] 360
[D] 408
- Q.60** Consider a 5-digit number $abcde$, such that b is twice that of d ; a is equal to the sum of c and e ; e is equal to the difference of b and a ; and d is twice that of c . The number that represents $abcde$ is (1 mark)
- [A] 34221
[B] 24122
[C] 58243
[D] 68244
- Q.61** **This question carries 2 marks. One option or more options is/are correct answer(s) to this question.**
The calendar for the year 2019 will be the same for the year(s) (2 marks)
- [A] 2024
[B] 2030
[C] 2036
[D] 2041
- Q.62** **This question carries 2 marks. One option or more options is/are correct answer(s) to this question.**
- Alex purchased 2 kg tomatoes and 5 kg potatoes for Rupees 100 and Bob purchased 3 kg potatoes and 4 kg onions for Rupees 80. The option(s) suited for the above conditions for the cost of 1 kg tomatoes and 1 kg onions, is/are (2 marks)
- [A] Rupees 20 and Rupees 11, respectively.
[B] Rupees 10 and Rupees 8, respectively.
[C] Rupees 12 and Rupees 10, respectively.
[D] Rupees 25 and Rupees 12.50, respectively.

Q.63 This question carries 2 marks. One option or more options is/are correct answer(s) to this question.

$$\sec^2(\theta) - \tan^2(\theta) =$$

(2 marks)

- [A] 1
- [B] $\operatorname{cosec}^2(\theta) - \cot^2(\theta)$
- [C] $\frac{1 - \sin(\theta)}{\cos(\theta)}$
- [D] 0

Q.64 This question carries 2 marks. One option or more options is/are correct answer(s) to this question.

The marks obtained by Arun and Barun in five subjects (out of 100 per subject) are given here. The marks obtained by Arun in Subjects 1, 2, 3, 4 and 5 are 80, 70, 60, 90 and 80, respectively. The marks obtained by Barun in Subjects 1, 2, 3, 4 and 5 are 70, 90, 70, 60 and 100, respectively.

The correct statement(s) among the following is/are

(2 marks)

- [A] The ratio of the highest marks to the lowest marks obtained by Arun is 3:2.
- [B] In Subject 4, Barun obtained 30% less than Arun.
- [C] Excluding the highest scored subject and the lowest scored subject for each student, the average marks obtained by both the students is the same.
- [D] If n_x is the number of subjects in which student x scored more than his own average marks, then $n_{Barun} > n_{Arun}$.

Section 3a: General Studies–Indian Economy

- Q.65** Along a linear demand curve, the price elasticity of demand is (1 mark)
- [A] elastic over the upper portion of the demand curve and inelastic over the lower portion of the demand curve.
 - [B] inelastic over the upper portion of the demand curve and elastic over the lower portion of the demand curve.
 - [C] elastic throughout.
 - [D] constant along the demand curve.
- Q.66** Suppose a bundle X lies on an indifference curve and another bundle Y lies to the right of the indifference curve, then the consumer (1 mark)
- [A] prefers bundle X to Y.
 - [B] prefers bundle Y to X.
 - [C] indifferent between bundle X and Y.
 - [D] must receive more of both – with bundle Y.
- Q.67** Movement along the demand curve is caused by (1 mark)
- [A] changes in the tastes and preferences of the consumer.
 - [B] changes in the price of the good.
 - [C] changes in the incomes of the consumer.
 - [D] changes in the prices of related goods.
- Q.68** The option that contains **WRONG** expansion of an abbreviation is (1 mark)
- [A] FIPB Foreign Investment Promotion Board
 - [B] IRBI Industrial Reconstruction Bank of India
 - [C] IREDA Indian Renewable Energy Development Association
 - [D] IIP Index of Industrial Production
- Q.69** Currency notes, coins and demand deposits held by the public in commercial banks are known as (1 mark)
- [A] high powered money.
 - [B] narrow money.
 - [C] fiat money.
 - [D] commodity money.

- Q.70** Gross National Product (GNP) can be defined as the
(1 mark)
- [A] total value of goods and services produced within a country in the current period.
 - [B] total value of all market transactions carried out in an economy in the current period.
 - [C] total value of goods and services produced in the current period including the net factor income earning from abroad.
 - [D] depreciation of capital stock and additions to stock (inventory).

- Q.71** The regime in which the Central Bank intervenes in the foreign exchange market by buying and selling foreign currencies to keep exchange rate fluctuations within bounds is known as
(1 mark)
- [A] fixed exchange rate.
 - [B] dirty floating exchange rate.
 - [C] pegged exchange rate.
 - [D] clean float exchange rate.

- Q.72** Bank rate refers to the rate at which
(1 mark)
- [A] commercial banks lends to public.
 - [B] commercial banks borrow money from Reserve Bank of India (RBI).
 - [C] Reserve Bank of India (RBI) lends to the Government of India.
 - [D] commercial banks charge from another bank for borrowing.

- Q.73** If Average Total Cost (ATC) is falling then
(1 mark)
- [A] Marginal Cost (MC) must be less than Average Total Cost (ATC).
 - [B] Total Cost (TC) must be constant.
 - [C] the Average Fixed Cost (AFC) must be above the Average Variable Cost (AVC) curve.
 - [D] Marginal Cost (MC) must be greater than the Average Total Cost (ATC).

- Q.74** The process of moving from self-employment and regular salaried employment to wage work is known as
(1 mark)
- [A] informalization.
 - [B] disguised unemployment.
 - [C] casualization of workforce.
 - [D] distress employment.

Q.75 The indicator used to measure the number of people dying prematurely or living in the state of 'disability' is known as

(1 mark)

- [A] Global Burden of Disease.
- [B] infant mortality and maternal mortality rates.
- [C] crude death rate.
- [D] life expectancy.

Q.76 A price ceiling will have no effect if the

(1 mark)

- [A] demand curve is vertical.
- [B] demand curve is horizontal.
- [C] supply curve is vertical.
- [D] supply curve is horizontal.

Q.77 Specific poverty alleviation programmes aimed at creation of assets by means of employment generation started during the

(1 mark)

- [A] First Five-Year Plan.
- [B] Second Five-Year Plan.
- [C] Third Five-Year Plan.
- [D] Fourth Five-Year Plan.

Q.78 The 'education cess' on all union taxes is earmarked for

(1 mark)

- [A] spending on elementary education.
- [B] spending on colleges, polytechnics and universities.
- [C] providing loans for students to pursue higher education.
- [D] making investment in the skill development programmes.

Q.79 **This question carries 2 marks. One option or more options is/are correct answer(s) to this question.**

Among the following elements, the essential element(s) of foreign aid or Overseas Development Assistance (ODA) given by the international agencies to the developing countries is/are

(2 marks)

- [A] development grants
- [B] loans with at least 25% grant
- [C] military assistance
- [D] technical co-operation

Q.80

This question carries 2 marks. One option or more options is/are correct answer(s) to this question.

The characteristic(s) of a perfectly competitive market structure is/are

(2 marks)

- [A] firms in the market produces homogenous goods
- [B] both sellers and buyers are price takers
- [C] firms can enter and exit the market freely
- [D] price and average revenue for the firm is the same

Section 3b: General Studies–Indian Society and Culture

- Q.81** In the ancient Indian texts, the Greeks are known as (1 mark)
- [A] Pahlavas
 - [B] Shakas
 - [C] Yavanas
 - [D] Aryans
- Q.82** Out of the four listed items valued in Indian tradition, the odd one is (1 mark)
- [A] Tulsi
 - [B] Turmeric
 - [C] Basmati
 - [D] Neem
- Q.83** “I want the concentration of wealth, not in the hands of a few, but in the hands of all.” It was a quotation from (1 mark)
- [A] Bhimrao Ramji Ambedkar
 - [B] Mohandas Karamchand Gandhi
 - [C] Jawaharlal Nehru
 - [D] Jayaprakash Narayan
- Q.84** Out of the four important scholars of Indian art listed below, one is not an Indian. The non-Indian scholar is (1 mark)
- [A] Rukmini Devi Arundel
 - [B] Kamaladevi Chattopadhyaya
 - [C] Ananda Coomaraswamy
 - [D] Laila Tyabji

Q.85 The Bardoli Satyagraha was directed against (1 mark)

- [A] indigo plantation
- [B] taxes on land
- [C] salt tax
- [D] cotton levy

Q.86 The Telangana movement began in (1 mark)

- [A] 1952
- [B] 1953
- [C] 1942
- [D] 1946

Q.87 Among the following, the largest circulating newspaper in India is (1 mark)

- [A] Dainik Jagran
- [B] Amar Ujala
- [C] The Times of India
- [D] Hindustan Times

Q.88 Among the following states of India, the most urbanized state as per 2011 Census and by considering the proportion of people living in urban areas is (1 mark)

- [A] Kerala
- [B] Maharashtra
- [C] Karnataka
- [D] Tamil Nadu

Q.89 The British Governor General who was also the Commander of the British forces during the American War of Independence is

(1 mark)

- [A] Arthur Wellesley
- [B] Robert Clive
- [C] Charles Cornwallis
- [D] Horatio Nelson

Q.90 The terms (i) Palempore, (ii) Manchester, (iii) Madhubani and (iv) Mahabalipuram, are related to

(1 mark)

- [A] bed covering, sculptures, paintings and textiles, respectively.
- [B] bed covering, textiles, paintings and sculptures, respectively.
- [C] sculptures, textiles, paintings and bed covering, respectively.
- [D] sculptures, textiles, bed covering and paintings, respectively.

Q.91 Artisanal guilds were known as

(1 mark)

- [A] karakhanas
- [B] nigamas
- [C] shrenis
- [D] hastakala

Q.92 The terms (i) sandalwood, (ii) muslin, (iii) Chanderi and (iv) Kasi, are related to

(1 mark)

- [A] Mysore, Dhaka, Madhya Pradesh and silk, respectively.
- [B] Dhaka, Mysore, silk and Madhya Pradesh, respectively.
- [C] Mysore, Madhya Pradesh, silk and Dhaka, respectively.
- [D] Madhya Pradesh, silk, Dhaka and Mysore, respectively.

Q.93 In the Preamble of the Constitution of India, in addition to Liberty, Equality and Fraternity, another virtue has been added with a resolve to be secured for “We, The People of India”. The added virtue is

(1 mark)

- [A] Independence
- [B] Friendship
- [C] Non-discrimination
- [D] Justice

Q.94 The Mansabdari system was devised by

(1 mark)

- [A] Babar
- [B] Humayun
- [C] Akbar
- [D] Aurangzeb

Q.95 **This question carries 2 marks. One option or more options is/are correct answer to this question.**

The famous personage(s) who belonged to the confederacies called *ganas or sanghas* is/are

(2 marks)

- [A] Siddhartha Gautama
- [B] Vardhamana Mahavira
- [C] Bimbisara
- [D] Ajatashatru

Q.96 **This question carries 2 marks. One option or more options is/are correct answer to this question.**

The script(s) predominantly discovered in ancient inscriptions is/are

(2 marks)

- [A] Brahmi
- [B] Devanagari
- [C] Indus
- [D] Kharoshti

Section 3c: General Studies–World Affairs

- Q.97** Father of Chinese Republic is (1 mark)
- [A] Dr. Sun Yat-Sen
 - [B] Mao Tse-Tung
 - [C] Zhou Enlai
 - [D] Hu Jintao
- Q.98** Arab–Israeli conflict led to the aggression between (1 mark)
- [A] Israel and Palestine
 - [B] Palestine and Turkey
 - [C] Turkey and Armenia
 - [D] Israel and Turkey
- Q.99** Executive Presidency is followed in (1 mark)
- [A] Sri Lanka
 - [B] Japan
 - [C] UK
 - [D] Italy
- Q.100** The first Communist State located in the Western Hemisphere was ruled for five decades by (1 mark)
- [A] Adolf Hitler
 - [B] Fidel Castro
 - [C] Mao Zedong
 - [D] Nikita Khrushchev

Q.101 The symbol of “ten stalks of Paddy (Rice)” represents the 10 countries that comprise the

(1 mark)

- [A] SAARC
- [B] BRICS
- [C] ASEAN
- [D] NAFTA

Q.102 Queen Elizabeth II is the formal head of

(1 mark)

- [A] Canada
- [B] USA
- [C] South Africa
- [D] Nigeria

Q.103 The method of the election process in India is

(1 mark)

- [A] first past the post
- [B] alternate vote
- [C] second ballot system
- [D] party list system

Q.104 Human Development Report (HDR) is published by

(1 mark)

- [A] UNDP
- [B] UNEP
- [C] UNICEF
- [D] UNESCO

Q.105 The Brahmaputra River is important for (1 mark)

- [A] China, India and Bangladesh
- [B] China, India and Burma
- [C] China, Pakistan and India
- [D] India, Bangladesh and Nepal

Q.106 The two theocracies in the World are (1 mark)

- [A] Vatican City and Iran
- [B] Vatican City and Iraq
- [C] Iran and Israel
- [D] Israel and Bhutan

Q.107 The official Language of Brazil is (1 mark)

- [A] Spanish
- [B] Portuguese
- [C] French
- [D] English

Q.108 Imposition of President's Rule in any state of India can be exercised under certain circumstances. This imposition is exercised under the (1 mark)

- [A] Article 364
- [B] Article 370
- [C] Article 356
- [D] Article 348

Q.109 "Chancellor" is the head of the Government in (1 mark)

- [A] Germany
- [B] US
- [C] Japan
- [D] Russia

Q.110 Operation Infinite Reach on Al- Qaeda Terrorists was ordered by (1 mark)

- [A] Bill Clinton
- [B] George W. Bush
- [C] Barack Obama
- [D] Ronald Reagan

Q.111 This question carries 2 marks. One option or more options is/are correct answer(s) to this question.

The correct item(s) of the Union List is/are

(2 marks)

- [A] Foreign Affairs
- [B] Communications
- [C] Police
- [D] Foreign Trade

Q.112 This question carries 2 marks. One option or more options is/are correct answer(s) to this question.

The correct combination(s) of country name and constitutional feature is/are (2 marks)

- [A] UK: Rule of Law
- [B] US: Fundamental Rights
- [C] Canada: Residual Powers
- [D] France: Liberty, Equality and Fraternity

Section 3d: General Studies–Ecology and Environment

Q.113 If B is Natality, D is Mortality, I is Immigration, E is Emigration, and N_t is population at time t, then the population $N_{(t+1)}$ is

(1 mark)

[A] $N_t + [(B+D) - (I+E)]$

[B] $N_t + [(B+I) - (D+E)]$

[C] $N_t + [(I+E) - (B+D)]$

[D] $N_t + [(D+E) - (B+I)]$

Q.114 The current human population of a developing area in India is 1 million and the carrying capacity is 2 million. If the intrinsic rate of natural increase per capita for the population is 0.02, then the estimated rate of increase in population for the "logistic growth model" is

(1 mark)

[A] 1000

[B] 10000

[C] 2000

[D] 20000

Q.115 Net primary productivity is

(1 mark)

[A] Gross primary productivity – Respiration + Transpiration

[B] Gross primary productivity – Respiration

[C] Gross primary productivity – Transpiration

[D] Gross primary productivity – Respiration – Transpiration

Q.116 In the last 3 billion years there were five episodes of mass extinction of species. The estimated rates for the sixth extinction (current) are
(1 mark)

- [A] 10 to 20 times faster
- [B] 10 to 50 times faster
- [C] 10 to 100 times faster
- [D] 100 to 1000 times faster

Q.117 The gases responsible for global warming are
(1 mark)

- [A] carbon dioxide, sulphur dioxide, hydrocarbons and carbon monoxide.
- [B] carbon dioxide, methane, chlorofluoro carbons and halogens.
- [C] carbon dioxide, methane, hydrocarbons and carbon monoxide.
- [D] chlorofluoro carbons, halogens, hydrocarbons and carbon monoxide.

Q.118 Presence of excess nitrate in drinking water causes
(1 mark)

- [A] skeletal nitrosis
- [B] black foot disease
- [C] blue baby syndrome
- [D] foot in the mouth disease

Q.119 Among the following, the least abundant gas in Earth's atmosphere is
(1 mark)

- [A] carbon dioxide
- [B] methane
- [C] argon
- [D] hydrogen

- Q.120** The Chipko movement to protect trees started in (1 mark)
- [A] Kashmir
 - [B] West Bengal
 - [C] Madhya Pradesh
 - [D] Uttarakhand
- Q.121** In a grass → deer → tiger food chain, for a grass biomass of 1000 t (t = tonne), the typical tiger biomass supported is in the range of (1 mark)
- [A] 10 t to 100 t
 - [B] 1 t to 10 t
 - [C] 10 kg to 100 kg
 - [D] 1 kg to 10 kg
- Q.122** Most useful wavelength regions of solar energy for efficient photosynthesis are (1 mark)
- [A] green and red
 - [B] blue and red
 - [C] blue and green
 - [D] green and violet
- Q.123** For removal of air pollutants, scrubber device uses (1 mark)
- [A] liquid spray
 - [B] filters
 - [C] electrodes
 - [D] catalyst

Q.124 The concentration of an aqueous salt solution in parts per trillion (ppt) is equivalent to number of nanogram of the salt dissolved in
(1 mark)

- [A] 10 gm of water
- [B] 1000 gm of water
- [C] 100 gm of water
- [D] 10000 gm of water

Q.125 The tidal effect is primarily due to
(1 mark)

- [A] the gravitational force of the Moon only.
- [B] the centrifugal force of the Earth's rotation only.
- [C] combination of the gravitational force of the Moon and the centrifugal force of the Earth's rotation.
- [D] the gravitational force of the Sun only.

Q.126 Eutrophication of water body is primarily due to the enrichment of
(1 mark)

- [A] phosphorus
- [B] nitrogen
- [C] carbon
- [D] potassium

Q.127 **This question carries 2 marks. One option or more options is/are correct answer(s) to this question.**

The major cause(s) of land degradation and subsequent soil erosion in relative terms at the global level is/are

(2 marks)

- [A] over grazing
- [B] deforestation
- [C] agriculture
- [D] industrial activity

Q.128

This question carries 2 marks. One option or more options is/are correct answer(s) to this question.

Ramsar convention address(es)

(2 marks)

- [A] conservation of terrestrial biodiversity
- [B] conservation of marine diversity
- [C] conservation of wetland
- [D] conservation of mangroves and coral reefs

END OF PART-I

HSEE-2019 PART-II (ESSAY TYPE)

Write an essay on ANY ONE of the following topics

(A) Is the loan waiver for farmers the only solution to the agrarian crisis?

OR

(B) Discuss economic growth vis-à-vis sustainable development.

OR

(C) Outline the current and emerging challenges to democracy in the world.

OR

(D) Discuss how wastewater reuse can be streamlined and made more acceptable in urban areas given the stigma attributed to the reuse of wastewater for human consumption.

(30 marks)

END OF PART-II

END OF HSEE-2019 QUESTION PAPER