

# Andhra Pradesh State Council of Higher Education

## Notations :

- 1.Options shown in green color and with ✓ icon are correct.
- 2.Options shown in red color and with ✗ icon are incorrect.

<b>Question Paper Name :</b>	Civil Engineering 17th Oct 2022 Shift 2
<b>Duration :</b>	120
<b>Total Marks :</b>	140
<b>Display Marks:</b>	No
<b>Share Answer Key With Delivery Engine :</b>	Yes
<b>Calculator :</b>	None
<b>Magnifying Glass Required? :</b>	No
<b>Ruler Required? :</b>	No
<b>Eraser Required? :</b>	No
<b>Scratch Pad Required? :</b>	No
<b>Rough Sketch/Notepad Required? :</b>	No
<b>Protractor Required? :</b>	No
<b>Show Watermark on Console? :</b>	Yes
<b>Highlighter :</b>	No
<b>Auto Save on Console?</b>	Yes
<b>Change Font Color :</b>	No
<b>Change Background Color :</b>	No
<b>Change Theme :</b>	No
<b>Help Button :</b>	No
<b>Show Reports :</b>	No
<b>Show Progress Bar :</b>	No
<b>Is this Group for Examiner? :</b>	No
<b>Examiner permission :</b>	Cant View
<b>Show Progress Bar? :</b>	No

## Research Methodology

Section Id :	549470324
Section Number :	1
Mandatory or Optional :	Mandatory
Number of Questions :	59
Section Marks :	70
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Maximum Instruction Time :	0
Is Section Default? :	null

Question Number : 1 Question Id : 54947023026 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

What is the most advantage of giving homework to students?

Options :

1. ✘  
Remain busy at home
2. ✘  
Study at home
3. ✘  
May be checked for their progress
4. ✔  
May develop the habit of self study

Question Number : 2 Question Id : 54947023027 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Who is regarded as Father of Computers?

Options :

1. ✘ Pascal
2. ✘ Bill Gates
3. ✔ Charles Babbage
4. ✘ J. V. Neumen

Question Number : 3 Question Id : 54947023028 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

National literary Mission was established in the year \_\_\_\_\_.

Options :

1. ✘ 1996
2. ✔ 1988

3. ✖ 1999

4. ✖ 2000

**Question Number : 4 Question Id : 54947023029 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

Who advocated the idea of basic education in India ?

**Options :**

1. ✖ Dr. Zakir Hussain

2. ✖ Dr. Rajendra Prasad

3. ✔ Mahatma Gandhi

4. ✖ Rabindranath Tagore.

**Question Number : 5 Question Id : 54947023030 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

The best remedy of the student's problems relating with learning is \_\_\_\_\_.

Options :

1. ✘ Suggestion for hard work
2. ✘ Supervised study in study hours
3. ✘ Suggestion for private tuition
4. ✔ Diagnostic study

Question Number : 6 Question Id : 54947023031 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Traditional teaching method is known as \_\_\_\_\_.

Options :

1. ✔ Chalk and teach
2. ✘ Brainstorming

3. ✖ Group discussion

4. ✖ Demonstration

**Question Number : 7 Question Id : 54947023032 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

Which organization initiated the MOOCs in India?

**Options :**

1. ✖ CSIR

2. ✖ DST

3. ✔ AICTE

4. ✖ UGC

**Question Number : 8 Question Id : 54947023033 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

The conceptual framework to carry out research is known as \_\_\_\_\_ of research.

Options :

1. ✘ Objectives
2. ✘ Synopsis
3. ✔ Design
4. ✘ Hypothesis

Question Number : 9 Question Id : 54947023034 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Evaluation of the depth of any research is based on

Options :

1. ✔ Objectives
2. ✘ Time period

Money spent

3. ✖

Topic

4. ✖

**Question Number : 10 Question Id : 54947023035 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

Which technique is used when the population is fixed or restricted to sampling?

**Options :**

Purpose

1. ✖

Cluster

2. ✖

Systematic

3. ✔

Stratified

4. ✖

**Question Number : 11 Question Id : 54947023036 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**



Which one is considered as most comprehensive source of population data?

Options :

Sampling

1. ✘

Census

2. ✔

NSS

3. ✘

Primary Health Studies

4. ✘

Question Number : 12 Question Id : 54947023037 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The following characteristic is not covered in descriptive research.

Options :

What

1. ✘

Where

2. ✘

3. ✘ When

4. ✔ Why

**Question Number : 13 Question Id : 54947023038 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

The basic characteristic of experimental research is \_\_\_\_\_

**Options :**

1. ✔ The independent variable is manipulated

2. ✘ Goals

3. ✘ A hypothesis

4. ✘ Design

**Question Number : 14 Question Id : 54947023039 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

In the following aspects, which one is not considered in research ethics?

Options :

1. ✖ Respect intellectual property
2. ✖ Objectivity
3. ✔ Cut and paste
4. ✖ Honesty

Is Section Default? : null

Question Id : 54947023040 Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No Question Pattern Type : NonMatrix Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (15 to 21)

**Read the following passage carefully and answer the questions from 15 to 21:**

Throughout human history the leading causes of death have been infection and trauma. Modern medicine has scored significant victories against both, and the major causes of ill health and death are now the chronic degenerative disease, such as coronary artery disease, arthritis, cataract and cancer. These have a long latency period before symptoms appear and a diagnosis is made. It follows that the majority of apparently healthy people are pre-ill.

Many national surveys reveal that malnutrition is common in developing countries. This is not the calorie or micronutrient deficiency associated with developing nation; but multiple micronutrients depletion, usually combined with calorific balance or excess. The incidence and severity of Type B malnutrition will be shown to be worse if newer micronutrients groups such as the essential fatty acids and flavonoids are included in the surveys.

However, the pharmaceutical model has also created an unhealthy dependency culture, in which relatively few of us accept responsibility for maintaining our own health. Instead, we have handed over this responsibility to health professional who knows very little about health maintenance or disease prevention.

Based on pharmaceutical thinking, most intervention studies have attempted to measure the impact of a single micronutrient on the incidence of disease. The classical approach says that if you give a compound formula to test subjects and obtain positive results, you cannot know which ingredient is exerting the benefit, so you must test each ingredient individually.

So do we need to analyze each individual's nutritional status and then tailor a formula specifically for him or her? While we do not have the resources to analyze millions of individual cases and there is no need to do so. The vast majority of people are consuming suboptimal amounts of most micronutrients and most of the micronutrients concerned are very safe. Accordingly, a comprehensive and universal program of micronutrient support is probably the most cost-effective and safest way of improving the general health of the nation.

#### **Sub questions**

**Question Number : 15 Question Id : 54947023041 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

Type B malnutrition will be worse if

Options :

Micronutrients groups are included

1. ✘

Fatty acids and flavonoids are included

2. ✔

Both Micronutrients groups and Fatty acids and flavonoids are included

3. ✘

Fatty acids added

4. ✘

Question Number : 16 Question Id : 54947023042 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

What is the process to know which ingredient is exerting the benefit?

Options :

Give compound formula to test subjects

1. ✘

Test each ingredient individually

2. ✔

3. ✘ Study the impact of single micronutrients

4. ✘ None of these

**Question Number : 17 Question Id : 54947023043 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

The Pharmaceutical model created

Options :

1. ✘ Business improvement

2. ✘ Nutritional status

3. ✔ Most unhealthy dependency culture

4. ✘ None of these

**Question Number : 18 Question Id : 54947023044 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

What is required to improve general health of the nation?

Options :

1. ✘ A comprehensive program
2. ✘ Universal program of micronutrient support system
3. ✔ All options
4. ✘ Give money to households

Question Number : 19 Question Id : 54947023045 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

What does classical approach say to measure the impact of a single micronutrient on the incidence of disease?

Options :

1. ✔ You must test each ingredient individually
2. ✘ Those who know very little about health maintenance or disease prevention

A diagnosis is made

3. ✖

Test all the aspects at a time

4. ✖

**Question Number : 20 Question Id : 54947023046 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

Malnutrition is common in \_\_\_\_\_.

**Options :**

Western countries

1. ✖

South Asian countries

2. ✖

East Asian countries

3. ✖

Developing countries

4. ✔

**Question Number : 21 Question Id : 54947023047 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**



Micronutrient support is

Options :

Most cost-effective

1. ✘

Safest

2. ✘

Both cost-effective and safest

3. ✔

Not desirable

4. ✘

Is Section Default? :

null

Question Number : 22 Question Id : 54947023048 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Encoding refers to \_\_\_\_\_.

Options :

Creating disturbance

1. ✘

Referring the message

2. ✘

3. ✓ With the assistance of symbols to express an idea

4. ✘ To interpret a message

**Question Number : 23 Question Id : 54947023049 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

In the progress of two- way communication, the sender is at one end while the \_\_\_\_\_ is at the other end

**Options :**

1. ✓ Receiver

2. ✘ Message

3. ✘ Transform

4. ✘ Make ready

**Question Number : 24 Question Id : 54947023050 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

What type of communication is being followed in Video conferencing?

Options :

1. ✘ Only visual
2. ✘ Two way visual
3. ✔ Two way Audio-visual
4. ✘ One way audio- visual

Question Number : 25 Question Id : 54947023051 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In the communication, conversation comes under the category of \_\_\_\_\_.

Options :

1. ✘ Non- verbal
2. ✔ Verbal

Drafted

3. ✖

Facial

4. ✖

**Question Number : 26 Question Id : 54947023052 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

In the following, which one is considered as semantic barrier of communication?

**Options :**

Attention of the receiver is diverted

1. ✖

Humming

2. ✖

Signal is lost before reaching the receiver

3. ✖

Receiver is not able to understand the meaning of the message

4. ✔

**Question Number : 27 Question Id : 54947023053 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

It is desirable to start the class room communication with \_\_\_\_\_.

Options :

1. ✘ Commands
2. ✔ Narration
3. ✘ Authority
4. ✘ Variability

Question Number : 28 Question Id : 54947023054 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In the following, which agency in India is announcing the central government programs and policies?

Options :

1. ✘ PTI
2. ✘ AIR

3. ✓ PIB

4. ✗ UTI

**Question Number : 29 Question Id : 54947023055 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

Who is considered as father of reasoning?

**Options :**

1. ✓ Aristotle

2. ✗ Plato

3. ✗ Rossow

4. ✗ Mantesquo

**Question Number : 30 Question Id : 54947023056 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

Find out the missing element in the following series: ABD, EFH, IJL, MNP and QRT.

Options :

1. ✘ ZXB

2. ✘ XYZ

3. ✘ WXY

4. ✔ UVX

Question Number : 31 Question Id : 54947023057 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Find out the wrong number in the following number series: 583, 643, 800 and 691.

Options :

1. ✘ 583

2. ✘ 643

3. ✓ 800

4. ✘ 691

**Question Number : 32 Question Id : 54947023058 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

For example, in certain language, CLASS is written as DMBTT. What will be the code for BLUE?

**Options :**

1. ✘ DMVG

2. ✓ CMVF

3. ✘ CNWH

4. ✘ DNWG

**Question Number : 33 Question Id : 54947023059 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**



In the following, which is the largest amongst  $\frac{5}{8}$ ,  $\frac{2}{3}$ ,  $\frac{7}{9}$ ,  $\frac{3}{5}$ ?

Options :

1. ✘  $\frac{5}{8}$

2. ✘  $\frac{2}{3}$

3. ✘  $\frac{3}{5}$

4. ✔  $\frac{7}{9}$

Question Number : 34 Question Id : 54947023060 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Suppose the length and breadth of a rectangle are in the ratio 3:1. If the breadth is 7 cm, then the length of the rectangle should be \_\_\_\_\_.

Options :

1. ✔ 21 cm

2. ✘ 18 cm

16 cm

3. ✘

14 cm

4. ✘

**Question Number : 35 Question Id : 54947023061 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

If the average of the 12 numbers is 15. Suppose a number 41 is also included, then what will be the average of these 13 numbers?

**Options :**

16

1. ✘

18

2. ✘

19

3. ✘

17

4. ✔

**Question Number : 36 Question Id : 54947023062 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

‘ Should India make efforts to exploit renewable energy to fulfill its energy requirements’?

I. Yes, most of the non- renewable sources of using at present are exhaustible.

II. No, exploiting renewable energy requires a huge investment and India is not in a position to invest that much amount of money.

**Options :**

Only argument I is strong

1. ✓

Only argument II is strong

2. ✗

Either I or II is strong

3. ✗

Neither I nor II is strong

4. ✗

**Question Number : 37 Question Id : 54947023063 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

Induction reasoning consists the following.

**Options :**

Starts with a general idea and reaches to specific conclusion

1. ✘

'If' and 'then' statements are figured

2. ✘

Drawing a general conclusion from a set of specific observations

3. ✔

'Top -down' thinking

4. ✘

**Question Number : 38 Question Id : 54947023064 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

Deduction reasoning involves .....

**Options :**

Conclusions are drawn from a set of specific observations

1. ✘

It quick way to make decisions

2. ✘

' Bottom- up' logic

3. ✘

Moving from general to the specific

4. ✓

Question Number : 39 Question Id : 54947023065 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Flow: River:: Stagnant : ?

Options :

Stream

1. ✘

Rain

2. ✘

Pool

3. ✓

Canal

4. ✘

Question Number : 40 Question Id : 54947023066 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In Indian logic 'Anumana' refers to \_\_\_\_\_.

Options :

1. ✘ Perception

2. ✔ Inference

3. ✘ Implication

4. ✘ Comparison

**Question Number : 41 Question Id : 54947023067 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

What is the meaning of 'Anupalabdhi'?

**Options :**

1. ✘ Postulation

2. ✘ Verbal testing

3. ✔ Non-apprehension

## Inference

4. ✘

Question Number : 42 Question Id : 54947023068 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which one of the following 'Hetvabhasa' is associated in the argument " sound is eternal because it is caused"?

Options :

Viruddha or contradictory

1. ✔

Satpratipaksa or inferentially contradicted

2. ✘

Sandyasama or the unproved

3. ✘

Badhita or non- inferentially contradicted

4. ✘

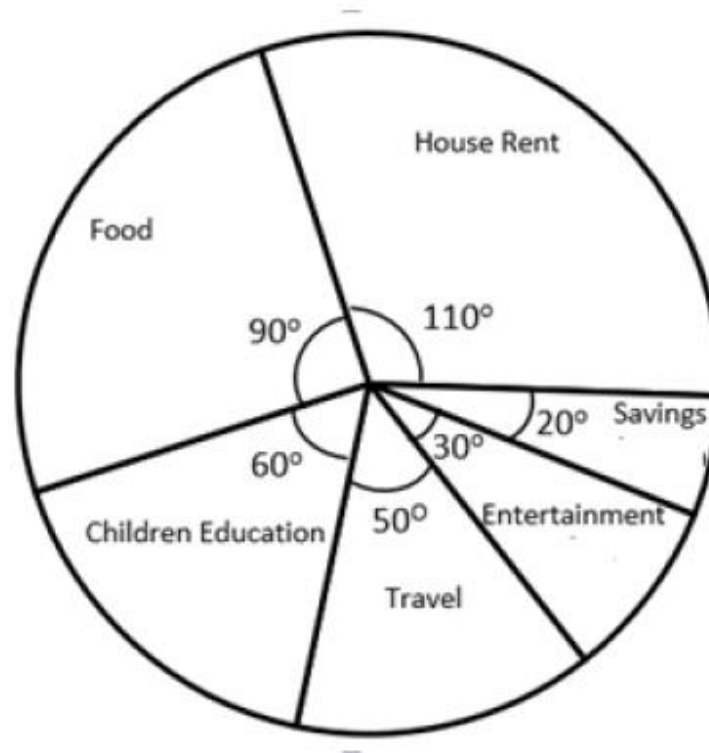
Is Section Default? :

null

Question Id : 54947023069 Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No Question Pattern Type : NonMatrix Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0  
Question Numbers : (43 to 45)

**Note:**

**Study the following Pie-chart carefully and answer the questions 43 – 45. It gives data on how the monthly income of a person is allocated to different heads.**



**Sub questions**

**Question Number : 43 Question Id : 54947023070 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

If the house rent paid in a month is Rs.16500, then the amount allocated on travel in that month, in rupees, is



Options :

1. ✘ 6500

2. ✔ 7500

3. ✘ 8500

4. ✘ 9500

Question Number : 44 Question Id : 54947023071 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If the amount spent in a month on travel is Rs 8000, then total income in that month is

Options :

1. ✘ 60,600

2. ✔ 57,600

3. ✘ 54,400

57,000

4. ✘

**Question Number : 45 Question Id : 54947023072 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

If the total income in a month is Rs. 54,000, then the difference in the amounts spent on food and travel in that month, in rupees, is

**Options :**

6000

1. ✔

7500

2. ✘

9000

3. ✘

10500

4. ✘

**Is Section Default? :** null

**Question Id : 54947023073 Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No Question Pattern Type : NonMatrix Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Question Numbers : (46 to 49)**

**Note:**

**Study the following Table carefully and answer the questions from 46 to 49. It gives data on marks obtained by students in different subjects during 2007-2010.**

Year	English		Maths		Science		Social Science	
	High.	Ave.	High.	Ave.	High.	Ave.	High.	Ave.
2007	80	70	94	60	89	70	65	55
2008	82	65	85	62	95	64	66	58
2009	71	56	92	68	97	68	68	48
2010	75	52	91	64	92	75	77	58

**Sub questions**

**Question Number : 46 Question Id : 54947023074 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

What is the overall average of marks in the four subjects in the year 2009?

**Options :**

1. ✖ 63

2. ✖ 64

3. ✘ 65

4. ✔ 60

**Question Number : 47 Question Id : 54947023075 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

Suppose that there were 40 students in science in the year 2009, how much total marks did they receive when combined together?

**Options :**

1. ✘ 2800

2. ✔ 2720

3. ✘ 2560

4. ✘ 3000

**Question Number : 48 Question Id : 54947023076 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

In which year, the difference between the highest and the average marks in Maths was maximum?

Options :

1. ✘ 2009

2. ✘ 2010

3. ✔ 2007

4. ✘ 2008

Question Number : 49 Question Id : 54947023077 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In which year, the difference between the highest and the average marks in social sciences was least ?

Options :

1. ✘ 2009

2. ✘ 2010

3. ✘ 2007

4. ✔ 2008

Is Section Default? : null

Question Number : 50 Question Id : 54947023078 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In the following acronyms, data is transferred securely across the world wide web.

Options :

1. ✘ HTTP

2. ✔ HTTPS

3. ✘ POP

4. ✘ IMAP

Question Number : 51 Question Id : 54947023079 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which software is needed to create slideshows?

Options :

1. ✘ Paint
2. ✘ Microsoft Word
3. ✘ Windows X P
4. ✔ Micro Soft Power Point

Question Number : 52 Question Id : 54947023080 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Joystick \_\_\_\_\_ device.

Options :

1. ✔ Input
2. ✘ Output

3. ✖ Storage

4. ✖ Network

**Question Number : 53 Question Id : 54947023081 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

Python is \_\_\_\_\_.

**Options :**

1. ✖ An operating system

2. ✔ Programming Language

3. ✖ An application program

4. ✖ A compiler

**Question Number : 54 Question Id : 54947023082 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**



Speed of internet is measured in \_\_\_\_\_.

Options :

1. ✘ GHZ
2. ✔ GBPS
3. ✘ GB
4. ✘ DPI

Question Number : 55 Question Id : 54947023083 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

VIDWAN scheme of MHRD is aimed at \_\_\_\_\_.

Options :

1. ✔ Creating a database to national research network
2. ✘ Making available e-resources

3. ✘ Promoting entrepreneurship among faculty

4. ✘ Awarding National professorship to faculty

**Question Number : 56 Question Id : 54947023084 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

The UGC portal ' e-SARTS is for \_\_\_\_\_.

**Options :**

1. ✘ Special Assistance for Research in Technology and Sciences

2. ✘ Special Assistance for Research and Training in Sciences

3. ✘ Support for Academic and Research Training in Social Sciences

4. ✔ Scholarship – Fellowship Award Registration Tracking System

**Question Number : 57 Question Id : 54947023085 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

In the following millennium goals , which one is not considered?

Options :

Achieve Universal Primary education

1. ✘

Ensure healthy lives and promote well being for all at all ages

2. ✔

Ensure environmental sustainability

3. ✘

Eradicate extreme poverty and hunger

4. ✘

Question Number : 58 Question Id : 54947023086 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The sustainable goals proposed by the United Nations will be achieved by the end of year.

Options :

2045

1. ✘

2040

2. ✘

3. ✘ 2035

4. ✔ 2030

**Question Number : 59 Question Id : 54947023087 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

What is the most adverse consequence of modern agriculture ?

**Options :**

1. ✘ Decrease in animals and their natural habitats

2. ✔ Water pollution due to usage of chemical fertilizers and pesticides

3. ✘ Soil erosion

4. ✘ Employment opportunities increase

**Question Number : 60 Question Id : 54947023088 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

In the following, which gas is occurring abundantly in the air naturally?

Options :

Water vapor

1. ✘

Carbon dioxide

2. ✘

Nitrogen

3. ✔

Oxygen

4. ✘

Question Number : 61 Question Id : 54947023089 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In India, the first nuclear reactor was set up at \_\_\_\_\_.

Options :

Bombay

1. ✔

Kalpakam

2. ✘

Hyderabad

3. ✘

Tarapur

4. ✘

**Question Number : 62 Question Id : 54947023090 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

In the following , which one is not considered as natural disaster ?

**Options :**

Cyclone

1. ✘

Earthquake

2. ✘

Tsunami

3. ✘

Short circuit fire

4. ✔

**Question Number : 63 Question Id : 54947023091 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

The species whose population has been reduced considerably and is at the verge of extinction, is called as \_\_\_\_\_ species.

Options :

1. ✘ Rare
2. ✔ Endangered
3. ✘ Vulnerable
4. ✘ Indeterminate

Question Number : 64 Question Id : 54947023092 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In the following traditional Universities, which one is not established in the year 1857?

Options :

1. ✘ Bombay
2. ✔ Delhi

Calcutta

3. ✘

Madras

4. ✘

**Question Number : 65 Question Id : 54947023093 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

Which organization is established in India to promote, review, encourage, assist, and coordinate social science research

**Options :**

NCAR

1. ✘

NCERT

2. ✘

CSIR

3. ✘

ICSSR

4. ✔

**Question Number : 66 Question Id : 54947023094 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**



In which year the first Open University in India was established?

Options :

1. ✘ 1986
2. ✘ 1980
3. ✔ 1982
4. ✘ 1985

Question Number : 67 Question Id : 54947023095 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The NCTE established in India to strengthen \_\_\_\_\_.

Options :

1. ✔ Teacher education
2. ✘ Technical education

Computer education

3. ✘

Medical education

4. ✘

**Question Number : 68 Question Id : 54947023096 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

What is the purpose of establishing the National Skills qualification framework in the country ?

**Options :**

Technology development

1. ✘

Social development

2. ✘

To develop competencies at different levels

3. ✔

Rural development

4. ✘

**Question Number : 69 Question Id : 54947023097 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

What is the main purpose of establishing National program for Technology Enhanced Learning ( NPTEL) by the MHRD?

Options :

To promote Engineering education

1. ✓

To promote higher education

2. ✘

To promote technology in agriculture

3. ✘

To develop pollution free technologies

4. ✘

Question Number : 70 Question Id : 54947023098 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

What is the explicit objective of value education?

Options :

To inculcate economic values

1. ✘

To inculcate political values

2. ✘

To inculcate cultural values

3. ✘

To inculcate moral values

4. ✔

## Civil Engineering

Section Id :	549470325
Section Number :	2
Mandatory or Optional :	Mandatory
Number of Questions :	70
Section Marks :	70
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Maximum Instruction Time :	0
Is Section Default? :	null

Question Number : 71 Question Id : 54947023099 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Consider a closed surface  $S$  surrounded by the volume  $V$ . If  $\bar{r}$  is the position vector of a point inside  $S$ , with  $n$  the unit normal on the surface  $S$ , the value of the integral  $\oint_S 5\bar{r} \cdot \hat{n} dS$  is \_\_\_\_.

Options :

1. ✘ 3V

2. ✘ 5V

3. ✘ 10V

4. ✔ 15V

Question Number : 72 Question Id : 54947023100 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Consider the differential equation  $\frac{dy}{dx} = x^2 y - 1.2y$  with  $y(0) = 1$ . A step size of 0.1 is used. The solution for  $y$  at  $x = 0.1$  is \_\_\_\_.

Options :

1. ✘ 0.905

2. ✔ 0.880

3. ✘ 1.000

4. ✘ 1.100

Question Number : 73 Question Id : 54947023101 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response

Time : N.A Think Time : N.A Minimum Instruction Time : 0

If the Eigen vectors of the matrix  $\begin{bmatrix} 1 & 2 \\ 0 & 2 \end{bmatrix}$  are  $\begin{bmatrix} 1 \\ p \end{bmatrix}$  and  $\begin{bmatrix} 1 \\ q \end{bmatrix}$  then the value of  $p+q$  is \_\_\_\_\_.

Options :

1. ✘ 2

2. ✘ 1

3. ✔  $\frac{1}{2}$

4. ✘ 0

Question Number : 74 Question Id : 54947023102 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The value of  $\lambda$  for which the function  $f(x) = \begin{cases} \lambda(x-1)(x-2), & 1 \leq x \leq 2 \\ 0 & , \text{ Otherwise} \end{cases}$  is a valid probability density function.

Options :

1. ✘  $\lambda = 1$

2. ✔  $\lambda = 6$

3. ✘  $\lambda = 8$

$$\lambda = \frac{1}{2}$$

4. ✘

Question Number : 75 Question Id : 54947023103 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The partial differential equation  $\frac{\partial^2 u}{\partial x^2} = \frac{1}{C^2} \frac{\partial^2 u}{\partial t^2}$  is \_\_\_\_\_

Options :

1. ✔ One dimensional wave equation

2. ✘ One dimensional heat equation

3. ✘ Two dimensional heat equation

4. ✘ Radio equation

Question Number : 76 Question Id : 54947023104 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If  $z$  is a complex number such that  $|z| \geq 2$  then the minimum value of  $\left|z + \frac{1}{2}\right|$  is \_\_\_\_\_.

Options :

1. ✘ equal to  $\frac{5}{2}$
2. ✔ lies in the interval (1, 2)
3. ✘ strictly greater than  $\frac{5}{2}$
4. ✘ strictly greater than  $\frac{3}{2}$  but less than  $\frac{5}{2}$

Question Number : 77 Question Id : 54947023105 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If the normal stress on the cross-section of a member is  $p$ , the shear stress on a plane inclined at  $\alpha$  to the direction of stress is equal to

Options :

1. ✘  $p \cos^2 \alpha$
2. ✘  $p \sin^2 \alpha$



3. ✘  $\frac{p \cos 2\alpha}{2}$

4. ✔  $\frac{p \sin 2\alpha}{2}$

Question Number : 78 Question Id : 54947023106 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A steel bar is rigidly held between two ends. If the temperature of the bar is dropped by 30°C, the nature of stress produced in the bar will be

Options :

1. ✘ compressive

2. ✔ tensile

3. ✘ torsional

4. ✘ thermal

Question Number : 79 Question Id : 54947023107 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The neutral axis of the reinforced concrete beam passes through

Options :

1. ✘ centre of gravity of the concrete section
2. ✘ meta-centre of the concrete section
3. ✔ centroid of the transformed section
4. ✘ centroid of the concrete section

Question Number : 80 Question Id : 54947023108 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The moment of inertia for a square section of side  $l$  about one of its diagonal is

Options :

1. ✔  $\frac{l^4}{12}$
2. ✘  $\frac{l^4}{12\sqrt{2}}$
3. ✘  $\frac{l^4}{6}$

4. ✘  $\frac{l^4}{6\sqrt{2}}$

Question Number : 81 Question Id : 54947023109 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The combined motion of rotation and translation can be assumed to be a fixed axis rotation about a centre which goes on changing from time to time. This centre is called as

Options :

1. ✘ meta-centre

2. ✘ shear centre

3. ✔ instantaneous centre

4. ✘ gravitational centre

Question Number : 82 Question Id : 54947023110 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In limit state design of concrete structures, the strain distribution is assumed to be

Options :

1. ✘ linear
2. ✘ non-linear
3. ✔ parabolic
4. ✘ linear and parabolic

Question Number : 83 Question Id : 54947023111 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The area of the Influence Line Diagram for the fixed end moment of a fixed beam of span  $l$  is

Options :

1. ✘  $\frac{l^2}{16}$
2. ✔  $\frac{l^2}{12}$
3. ✘  $\frac{l^2}{8}$

4. ✘  $\frac{l^2}{24}$

Question Number : 84 Question Id : 54947023112 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If a simply supported concrete beam, prestressed with a force of 2500 kN, is designed by load balancing concept for an effective span of 10 m and to carry a total load of 40 kN/m, the central dip of the cable profile should be

Options :

- 1. ✘ 100 mm
- 2. ✔ 200 mm
- 3. ✘ 300 mm
- 4. ✘ 400 mm

Question Number : 85 Question Id : 54947023113 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The total strain energy stored in a truss member is 500 J and it carries an axial pull of 100 kN. The extension of the truss member in mm is

Options :

1. ✘ 2

2. ✘ 1

3. ✘ 5

4. ✔ 10

Question Number : 86 Question Id : 54947023114 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A uniform beam of span  $l$  is rigidly fixed at both supports. It carries a uniformly distributed load  $W$  per unit length. The bending moment at mid-span is

Options :

1. ✘  $\frac{Wl^2}{8}$

2. ✘  $\frac{Wl^2}{12}$

3. ✘  $\frac{Wl^2}{16}$

4. ✓  $\frac{wl^2}{24}$

Question Number : 87 Question Id : 54947023115 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Lateral ties in RC columns are provided to resist

Options :

1. ✗ bending moment
2. ✗ shear
3. ✓ buckling of longitudinal steel bars
4. ✗ both bending moment and shear

Question Number : 88 Question Id : 54947023116 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The minimum cover in mm to the main reinforcement bars in slab, beam, column and footing respectively are

Options :

1. ✗ 10,15, 20, 25

2. ✓ 15, 25, 40, 75

3. ✗ 20, 25, 30, 40

4. ✗ 20, 35, 40, 75

**Question Number : 89 Question Id : 54947023117 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

$U_1$  and  $U_2$  are the strain energies stored in a prismatic bar due to axial forces  $P_1$  and  $P_2$  respectively. If  $U_1 > U_2$  and  $P_1 < P_2$ , the strain energy  $U$  stored in the same bar due to combined action of  $P_1$  and  $P_2$  will be

**Options :**

1. ✗  $U = U_1 + U_2$

2. ✗  $U = U_1 U_2$

3. ✗  $U < U_1 + U_2$

4. ✓  $U > U_1 + U_2$

**Question Number : 90 Question Id : 54947023118 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**



Clapeyron's theorem of three moments is applied to

Options :

1. ✘ simply supported beam
2. ✘ fixed beam
3. ✘ propped cantilever beam
4. ✔ fixed and continuous beams

Question Number : 91 Question Id : 54947023119 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A steel column in a multi-storeyed structure carries a load of 125 kN. It is built up of 2 ISMC 350 channels connected by lacing. The lacing carries a load of

Options :

1. ✘ 125 kN
2. ✘ 12.5 kN
3. ✔ 3.125 kN
4. ✘ Zero

Question Number : 92 Question Id : 54947023120 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The minimum size of the reinforcement bar in RCC columns is

Options :

1. ✘ 8 mm
2. ✘ 6 mm
3. ✔ 12 mm
4. ✘ 10 mm

Question Number : 93 Question Id : 54947023121 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A simply supported beam of span  $l$  and flexural rigidity  $EI$  is subjected to a clockwise moment  $M$  at left end. The strain energy stored in the beam due to bending is

Options :

1. ✔  $\frac{M^2 l}{6EI}$
2. ✘  $\frac{M^2 l}{3EI}$

3. ✖  $\frac{M^2 l}{2EI}$

4. ✖  $\frac{M^2 l}{EI}$

Question Number : 94 Question Id : 54947023122 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In a fillet weld, the weakest section is the

Options :

1. ✖ smaller side of the fillet
2. ✔ throat of the fillet
3. ✖ side perpendicular to force
4. ✖ side parallel to force

Question Number : 95 Question Id : 54947023123 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The shear stress at the neutral axis in a beam of triangular cross-section with a base of 40 mm and an altitude of 20 mm subjected to a shear force of 3 kN is

Options :

1. ✘ 3 MPa
2. ✘ 6 MPa
3. ✔ 10 MPa
4. ✘ 20 MPa

Question Number : 96 Question Id : 54947023124 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

An electric pole 5 m high is fixed into the foundation. It carries a wire at the top and is free to move sideways. The effective length of the pole is

Options :

1. ✘ 3.25 m
2. ✘ 4 m
3. ✘ 5 m

4. ✓ 10 m

Question Number : 97 Question Id : 54947023125 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If in a soil, air content is 0.08 and porosity is 30%, the percentage air voids is \_\_\_\_\_

Options :

1. ✗ 8%

2. ✓ 2.4%

3. ✗ 3.75%

4. ✗ 26.7%

Question Number : 98 Question Id : 54947023126 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Consistency of fine grained soils, particularly clay is governed by \_\_\_\_\_

Options :

1. ✗ grain size distribution

2. ✗ density

3. ✓ water content

4. ✘ specific gravity

Question Number : 99 Question Id : 54947023127 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The quick and accurate method for determination of water content of soils is

\_\_\_\_\_

Options :

1. ✘ Oven drying method

2. ✓ Calcium carbide method

3. ✘ Sand bath method

4. ✘ Alcohol method

Question Number : 100 Question Id : 54947023128 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Line of optimums closely follows \_\_\_\_\_ percentage air voids line.

Options :

1. ✘ 10

2. ✘ Zero

3. ✔ 5

4. ✘ 15

**Question Number : 101 Question Id : 54947023129 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

If the liquid limit of over consolidated clay is 40%, the compression index is \_\_\_\_\_

**Options :**

1. ✘ 0.36

2. ✘ 0.28

3. ✘ 0.4

4. ✔ 0.21

**Question Number : 102 Question Id : 54947023130 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

The inclination of failure plane with horizontal in unconfined compression test specimen of cohesive soil with cohesion of  $30 \text{ kN/m}^2$  and angle of internal friction of  $20^\circ$  is \_\_\_\_\_

Options :

1. ✘  $20^\circ$
2. ✔  $55^\circ$
3. ✘  $35^\circ$
4. ✘  $45^\circ$

Question Number : 103 Question Id : 54947023131 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which of the following shear tests is best suited for conducting Consolidated Undrained test on saturated soil specimens?

Options :

1. ✘ Direct Shear Test
2. ✔ Triaxial Test
3. ✘ Vane Shear Test



## UCC test

4. ✘

Question Number : 104 Question Id : 54947023132 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Seepage velocity of a soil with discharge velocity of 0.8 m/s and a void ratio of 0.5 is \_\_\_\_\_

Options :

1. ✘ 0.4 m/s

2. ✘ 1.6 m/s

3. ✔ 2.4 m/s

4. ✘ 1.3 m/s

Question Number : 105 Question Id : 54947023133 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The volume of a soil at a water content of 18% is 20 cc. If soil has shrinkage limit of 20%, the volume of soil at a water content of 35% will be \_\_\_\_\_.

Options :

1. ✘ 20 cc

2. ✘ 38 cc

3. ✔ 35 cc

4. ✘ 30 cc

Question Number : 106 Question Id : 54947023134 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The critical hydraulic gradient of a soil with submerged unit weight of  $9 \text{ kNm}^3$  is \_\_\_\_\_.

Options :

1. ✔ 0.917

2. ✘ 1.94

3. ✘ 1

4. ✘ 0

Question Number : 107 Question Id : 54947023135 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The predominant fluid property when fluid is in static condition is

Options :

1. ✘ viscosity
2. ✘ compressibility
3. ✘ surface tension
4. ✔ specific gravity

Question Number : 108 Question Id : 54947023136 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If the minimum specific energy for a 3 m wide rectangular channel is 6 Nm/N, the critical depth is equal to

Options :

1. ✘ 0.5 m
2. ✘ 9.0 m
3. ✘ 2.0 m
4. ✔ 4.0 m

Question Number : 109 Question Id : 54947023137 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response

Time : N.A Think Time : N.A Minimum Instruction Time : 0

If the force exerted by the jet of water on a flat plate is 10 kN, the force exerted by the same jet in the case of a semi-circular plate (symmetrical) will be

Options :

1. ✘ 10 kN
2. ✘ 5 kN
3. ✔ 20 kN
4. ✘ Zero

Question Number : 110 Question Id : 54947023138 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The rainfall hyetograph is a graphical representation between

Options :

1. ✘ cumulative rainfall depth and time
2. ✘ rainfall intensity and basin area
3. ✔ rainfall intensity and time

## infiltration and time

4. ✖

**Question Number : 111 Question Id : 54947023139 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

For a 3-hour rainfall of 8.1 cm, the surface runoff is 3.6 cm. If  $\phi$ -index is 1.6 cm, the W-index is equal to

**Options :**

1. ✖ 2.0 cm

2. ✔ 1.5 cm

3. ✖ 6.5 cm

4. ✖ 0.5 cm

**Question Number : 112 Question Id : 54947023140 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

Useful soil moisture for plant growth is

**Options :**

1. ✔ capillary water

2. ✖ gravity water

3. ✘ hygroscopic water

4. ✘ groundwater

**Question Number : 113 Question Id : 54947023141 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

In the Aqueduct cross drainage work,

**Options :**

1. ✘ the drain water flows into the canal.

2. ✘ the natural drain water flows over the canal.

3. ✔ the canal flows over the natural drain water.

4. ✘ the duct is provided in the canal.

**Question Number : 114 Question Id : 54947023142 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

A process determining outflow pattern from reservoirs for any given pattern of inflow, storage and tail-water condition is known as

**Options :**

1. ✘ Hydrograph
2. ✘ Flood discharge estimate
3. ✘ Runoff estimate
4. ✔ Flood routing

**Question Number : 115 Question Id : 54947023143 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

The rain gauge station density as per Bureau of Indian Standards recommendation for plains is approximately equal to one station per \_\_\_\_\_ sq.km.

**Options :**

1. ✘ 130
2. ✘ 260
3. ✘ 390
4. ✔ 520

Question Number : 116 Question Id : 54947023144 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Contour canal involves \_\_\_\_\_ cross drainage works.

Options :

1. ✘ less
2. ✔ more
3. ✘ unpredictable number
4. ✘ infinite

Question Number : 117 Question Id : 54947023145 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If L is the total length of a canal in kilometers, P is total perimeter of its lining in meters and C is the cost of lining per square meter, the additional expenditure involved on lining, is

Options :

1. ✔  $100PLC$
2. ✘  $(PLC)/1000$
3. ✘  $(PL)/(1000C)$



4. ✘  $(PC)/(100L)$

Question Number : 118 Question Id : 54947023146 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Specific speed of an impulse turbine ranges from

Options :

1. ✔ 12 to 70

2. ✘ 80 to 400

3. ✘ 300 to 1000

4. ✘ 1000 to 1200

Question Number : 119 Question Id : 54947023147 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

As per IS 10500 – 2012, what is the maximum concentration of Calcium (as Ca) requirement (acceptable limit) for drinking water?

Options :

1. ✘ 250 mg/l

2. ✘ 200 mg/l

3. ✘ 125 mg/l

4. ✔ 75 mg/l

Question Number : 120 Question Id : 54947023148 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The principal coagulation mechanism generally occurring in low turbidity-high alkalinity water in water treatment process is

Options :

1. ✘ inter-particle bridging

2. ✔ sweep coagulation

3. ✘ ionic layer compression

4. ✘ adsorption and charge neutralization

Question Number : 121 Question Id : 54947023149 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In water distribution systems, surge tanks are used

Options :

1. ✘ to store water.
2. ✘ to increase the velocity of flow in pipe line.
3. ✘ as overflow valves.
4. ✔ to guard against water hammer.

**Question Number : 122 Question Id : 54947023150 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

The most efficient cross section of sewers in a separate sewerage system is

**Options :**

1. ✘ parabolic
2. ✘ egg shaped
3. ✘ rectangular
4. ✔ circular

**Question Number : 123 Question Id : 54947023151 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

Yield coefficient (Y) of biological growth used in activated sludge process is defined as

Options :

$$Y = \frac{\text{mass of organic matter produced}}{\text{mass of substrate utilized (consumed)}}$$

1. ✘

$$Y = \frac{\text{mass of biomass present}}{\text{mass of substrate utilized (consumed)}}$$

2. ✘

$$Y = \frac{\text{mass of biomass produced}}{\text{mass of substrate utilized (consumed)}}$$

3. ✔

$$Y = \frac{\text{mass of organic matter present}}{\text{mass of substrate utilized (consumed)}}$$

4. ✘

Question Number : 124 Question Id : 54947023152 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The first stage of natural process of sludge digestion is

Options :

Acid fermentation

1. ✘

2. ✖ Acetogenesis

3. ✔ Hydrolysis

4. ✖ Methane formation

**Question Number : 125 Question Id : 54947023153 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

Which one of the following is not a primary air pollutant?

**Options :**

1. ✖ NO<sub>2</sub>

2. ✔ ground level Ozone

3. ✖ Volatile Organic Compounds

4. ✖ CO

**Question Number : 126 Question Id : 54947023154 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

The most suitable air pollution control equipment used for the removal of SO<sub>2</sub> is

**Options :**

1. ✘ Wet scrubbers and Electrostatic Precipitator
2. ✘ Selective Catalytic Reduction or Non-Catalytic Reduction System
3. ✘ Wet Absorption system and Thermal Oxidation System
4. ✔ Wet FGD and Dry FGD system

**Question Number : 127 Question Id : 54947023155 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

For a stationary container system in solid waste collection, if  $C_t$  is number of containers emptied per trip, 'uc' is average unloading time per container,  $n_p$  is number of container pickup locations per trip, 'dbc' is the average time spent driving between container locations, what is the pick-up time required per trip?

**Options :**

1. ✘  $C_t (dbc) + (n_p-1)(uc)$
2. ✘  $C_t (uc) + (n_p+1)(dbc)$
3. ✘  $C_t (dbc) + (n_p+1)(uc)$
4. ✔  $C_t (uc) + (n_p-1)(dbc)$

Question Number : 128 Question Id : 54947023156 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The sound intensity level (IL) in bels is defined as (when I is sound intensity in Watts, and  $I_0$  is the intensity of least audible sound level)

Options :

1. ✓  $IL = \log_{10} (I/I_0)$
2. ✗  $IL = \log_{10} (I * I_0)$
3. ✗  $IL = \log_{10} (I_0/I)$
4. ✗  $IL = \log_{10} (I - I_0)$

Question Number : 129 Question Id : 54947023157 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

For calculation of stopping distance, the longitudinal friction coefficient values, as recommended by IRC are

Options :

1. ✗ 0.30 to 0.35
2. ✓ 0.35 to 0.40

3. ✘ 0.15 to 0.20

4. ✘ 0.25 to 0.30

Question Number : 130 Question Id : 54947023158 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The extra width on two-lane pavement for radius of curve between 61 to 100 m as recommended by IRC is

Options :

1. ✔ 0.9 m

2. ✘ 1.2 m

3. ✘ 0.6 m

4. ✘ 1.5 m

Question Number : 131 Question Id : 54947023159 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The design hourly volume for a roadway is

Options :

1. ✘ 29<sup>th</sup> highest hourly volume



2. ✓ 30<sup>th</sup> highest hourly volume

3. ✘ 31<sup>st</sup> highest hourly volume

4. ✘ 50<sup>th</sup> highest hourly volume

**Question Number : 132 Question Id : 54947023160 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

For the purpose of checking the requirements of highway geometric design elements, the design speed is

**Options :**

1. ✘ 50<sup>th</sup> percentile speed

2. ✘ 75<sup>th</sup> percentile speed

3. ✘ 85<sup>th</sup> percentile speed

4. ✓ 98<sup>th</sup> percentile speed

**Question Number : 133 Question Id : 54947023161 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

For the capacity of a traffic lane not being affected adversely, the minimum clearance from the pavement edge to the obstruction is

Options :

1. ✘ 1.50 m
2. ✘ 1.00 m
3. ✘ 1.75 m
4. ✔ 1.85 m

Question Number : 134 Question Id : 54947023162 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The compensation for curvature in Indian Railways per degree of curve for Broad Gauge track is

Options :

1. ✘ 0.05%
2. ✔ 0.04%
3. ✘ 0.03%

4. ✘ 0.02%

Question Number : 135 Question Id : 54947023163 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

According to ICAO recommendation, the basic runway length, for every 300 m rise in elevation above the mean sea level should be increased at the rate of

Options :

1. ✘ 5%

2. ✘ 6%

3. ✔ 7%

4. ✘ 8%

Question Number : 136 Question Id : 54947023164 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Least count of a metric chain is

Options :

1. ✔ one link.

2. ✘ half-link.
3. ✘ quarter-link.
4. ✘ one-tenth link.

**Question Number : 137 Question Id : 54947023165 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

Systematic Errors are those errors

**Options :**

1. ✘ which cannot be recognized.
2. ✘ whose character is not understood.
3. ✘ whose effects are cumulative and can be eliminated by adopting suitable methods.
4. ✔ which change rapidly.

**Question Number : 138 Question Id : 54947023166 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

Which line is tangential to the level line at a point?

Options :

1. ✘ Datum line
2. ✘ Vertical line
3. ✔ Horizontal line
4. ✘ Plumb line

Question Number : 139 Question Id : 54947023167 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which among the following are having larger wavelengths?

Options :

1. ✘ X-rays
2. ✘ Cosmic waves
3. ✔ Radio waves
4. ✘ Gamma ways

Question Number : 140 Question Id : 54947023168 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The principle of Global Positioning System is

Options :

1. ✘ Triangulation.
2. ✔ Trilateration.
3. ✘ Parallelism.
4. ✘ Traversing.