

## JUNIOR ENGINEER CIVIL ENGINEERING EXAMINATION 2024 MEMORY BASED QUESTION (PAPER-I)

<b>EXAM DATE</b>	<b>06/06/2024</b>
<b>EXAM TIME</b>	<b>9:00 AM – 11:00 AM</b>
<b>SUBJECT</b>	<b>Junior Engineer 2024 Civil Engineering (Paper-I)</b>

### SECTION A & B : CIVIL ENGINEERING (NON-TECH)

**Q.1.** Who was the first Attorney General of India?

**Ans.** Motilal Chimanlal Setalvad. He was also the chairman of first Law Commission of India. (Article-76)

**Q.2.** What was the number of member of Indian National Congress inaugural session of 1885?

**Ans.** INC was established with 72 representative met at Bombay. Prominent leaders were Dadabhai Naoroji, Surendranath Banerjee, Badruddin Tyabji, Pherozshah Mehta etc.

**Q.3.** Ajit Pawar, the Deputy Chief Minister of Maharashtra, belongs to which political party?

**Ans.** Nationalist Congress Party.

**Q.4.** Which state had the highest literacy rate as per Census 2011?

**Ans.** Kerala (94%)

**Q.5.** Article 32 is related to

**Ans.** Power of Supreme Court to issue writ petitions eg. Habeas Corpus, Mandamus, Quo Warranto, Prdribition Certiori.

**Q.6.** Who is the current CAG of India?

**Ans.** Girish Chandra Murmu. Article-148

**Q.7.** Market policy of Allauddin Khilji?

**Ans.** Market Control System

Sahana-i-mandi

Barid

Munhiyous

**Q.8.** Which Act was passed on 10 August, 2023?

**Ans.** The Pharmeacy (Amendment) Act, 2023

**Q.9.** Name of Narmada river in Madhya Pradesh?

**Ans.** Rewa river life line of MP and Gujrat. It originates from Anuppur district in Amarkantale

**Q.10.** Malwa plateau situated

**Ans.** Western Madhya Pradesh and south-eastern Rajasthan.

**Q.11.** 32<sup>nd</sup> Article of constitution related with?

**Ans.** Constitutional remedies in constitution (5 writs)

**Q.12.** Who is the present Governor of Tamil Nadu?

**Ans.** Thiru R.N. Ravi

**Q.13.** CC stands for

**Ans.** Carbon copy.

**Q.14.** Jal Shakti Minister

**Ans.** Gajendra Singh Shekhawat.

**Q.15.** Attorney General of India?

**Ans.** R. Venkataramani

**Q.16.** Governor of Telangana

**Ans.** C.P. Radhakrishnan

**Q.17.** Who was the Advisor of Constituent Assembly?

**Ans.** Benegal Narsing Rau.

**Q.18.** What is child sex ratio 2011

**Ans.** 918/1000

**Q.19.** Highest literacy 2011 Census

**Ans.** Kerala

**Q.20.** Power House of Cell

**Ans.** Mitochondria

**Q.21.** Bone & Teeth Decay

**Ans.** Fluoride

**Q.22.** What is the use of barometer

**Ans.** Atmospheric Pressure measurement

**Q.23.** Basanti Bisht folk singer related from which state?

**Ans.** Uttarakhand

**Q.24.** Doctroin of Lapas first implemented on which state?

**Ans.** Satara

**Q.25.** Shikshak Award (Teacher) started which year?

**Ans.** 1958

**Q.26.** Namami Devi Narmada compaign which state?

**Ans.** Madhya Pradesh

**Q.27.** Momvement of Horse in chess game

**Ans.** L shape

### SECTION C : CIVIL ENGINEERING

**Q.1.** If Fore Sight reading taken on instrument is more than back sight reading. The next station will at

**Ans.** Lower elevation

**Q.2.** Which of following is not recyclable waste

(a) Plastic

(b) Paper

(c) Glass

(d) Vegetable peeling

**Ans.** (d) Vegetable peeling

**Q.3.** Road sign of equilateral triangle with apex downward with red border and white background represent which sign

**Ans.** Give way sign



**Q.4.** Transverse slope provided for proper drainage on road is called

**Ans.** Camber

**Q.5.** Printer, Monitor, Scanner etc. these components comes under which waste?

**Ans.** E waste

**Q.6.** What is the value of  $X_{ulim}$  for Fe500 grade of concrete.

(a) 0.46

(b) 0.53

(c) 0.48

(d) 0.43

**Ans.** (a) 0.46

**Q.7.** Lead glass is used in

**Ans.** Door & window

**Q.8.** Corrosion & rusting in timber is due to

**Ans.** Moisture content

**Q.9.** Due to segregation concrete what will happen in

- |                           |                          |
|---------------------------|--------------------------|
| (a) Decrease permeability | (b) Decrease workability |
| (c) Increase durability   | (d) Increase strength    |

**Ans.** (b) Decrease workability

**Q.10.** Which of the following if present in water in excess amount cause dental fluorosis and molting of teeth

**Ans.** Fluoride

**Q.11.** Breaking efficiency depends on

**Ans.** Speed

We know that, Breaking efficiency  $\eta_B = \frac{f}{f_{max}} \times 100$

Friction coefficient  $f = \frac{v^2}{2gs}$

**Q.12.** Hand signal left arm extended represent

**Ans.** Continue to move to left

**Q.13.** Definition of Absolute pressure

**Ans.**  $P_{abs} = P_{atm} + P_{gauge}$

**Q.14.** Potential head depend on

**Ans.** Potential energy per unit weight of liquid

**Q.15.** Which of the following defect occurs due to improper seasoning

- |          |                   |
|----------|-------------------|
| (a) Burl | (b) Shake         |
| (c) Worn | (d) Honey combing |

**Ans.** (d) Honey combing

**Q.16.** The maximum permissible limit of inorganic solids for water to be used is

**Ans.** 3000 mg/l

**Q.17.** Equation of continuity is based on the principle of

**Ans.** Conservation of mass

**Q.18.** What is the subsequent step after filling a centrifugal pump with liquid to remove air?

- (a) Start the pump motor  
(c) Increase the pump speed

- (b) Close the delivery pipe  
(d) Open the discharge valve

**Ans.** (a) Start the pump motor

**Q.19.** \_\_\_\_\_ is the study of fluid in both rest and in motion:

**Ans.** Fluid mechanics

**Q.20.** Shear strength of concrete does not depend on

- (a) grade of concrete  
(c) grade of steel  
(b) area of steel  
(d) None of these

**Ans.** (c) grade of steel

**Q.21.** Clay brick are burnt at the temprature of

**Ans.** 1200 – 1400°C

**Q.22.** Maximum strain in compression fiber.

**Ans.** 0.0035 – 0.75  $E_{CL}$

(Least Compression Fiber)

**Q.23.** Singly reinforced beam is designed as-

**Ans.** Under reinforcement & min cross section area

**Q.24.** Which of following is not considered as minor losses in pipe

- (a) bending of pipe  
(c) frictional loss  
(b) joint in pipe  
(d) Sudden enlargement

**Ans.** (c) Frictional loss

**Q.25.** If horizontal or flat line is observed in particle size distribution curve then it represents:

**Ans.** Skip graded or gap graded.

**Q.26.** If  $K_a$  is coefficient of active earth pressure &  $K_p$  is coefficient of passive earth pressure then

**Ans.**  $K_p > K_a$

**Q.27.** In the Kennedd'y theory, if the ratio of mean velocity  $V_o$  and critical velocity  $V_c$  is representade by m which is  $m > 1$  then it represents:

**Ans.** Scouring will occur

We know that,  $V_c = 0.55 mD^{0.64}$

Where, m = Creitical velocity ratio

- $m > 1$  scouring will occur
- $m < 1$  silting will occur
- $m = 1$  no silting & scouring will occur

**Q.28.** Out of the following which method will produce greater irrigation efficiency.

**Ans.** Drip irrigation.

**Q.29.** Which method of irrigation is suitable for larger areas:

**Ans.** Sprinkler irrigation

**Q.30.** What are the advantages of canal lining.

- Ans.**
- minimise the seepage losses
  - to prevent bed & sides of the canal from scouring & silting
  - to increase the velocity of flow
  - to prevent water logging

**Q.31.** For a column of length 3m having one end fixed and other hinged, the effective length of the column is

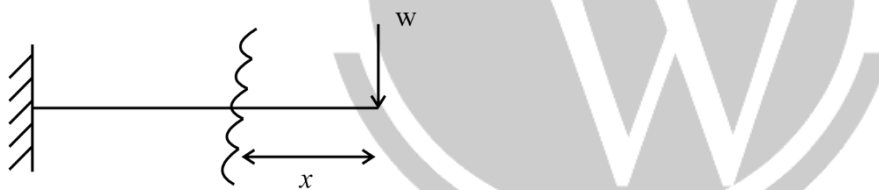
**Ans.**  $L_{\text{eff}} = \frac{L}{\sqrt{2}} = \frac{3}{\sqrt{2}} = 2.121 \text{ m}$  OR  $L_{\text{eff}} = 0.8 L = 0.8 \times 3 = 2.4 \text{ m}$

**Q.32.** The general dimensions of area estimation should be measured nearest to:

**Ans.** 0.01 m<sup>2</sup>

**Q. 33.** A cantilever beam subjected to point load at the free end then the equation of slope at distance X from free end will be

**Ans.**



Slope equation:  $EI \frac{d^2y}{dx^2} = -M_x$ ,  $BM = (-wx)$

$$EI \frac{d^2y}{dx^2} = wx$$

$$EI \frac{dy}{dx} = w \cdot \frac{x^2}{2} + C_1$$

$$x = L, \frac{dy}{dx} = 0$$

$$C_1 = -\frac{wL^2}{2}$$

$$EI \frac{dy}{dx} = \frac{wx^2}{2} - \frac{wL^2}{2}$$

**Q.34.** Which estimate is used for administrative sanction?

**Ans.** Preliminary Estimate

**Q.35.** In cubical content estimate the approximate cost is given by

**Ans.** Total cubical contents (Volume of buildings) multiplied by Local Cubic Rate

**Q.36.** A revised estimate is required to be prepared when

**Ans.** The original sanctioned estimate exceeds more than 5% of original sanctioned estimate.

**Q.37.** Which of the following type of foundation is used in the soil has a low bearing capacity and load of the structure has to be distributed over a large area.

**Ans.** Raft Foundation

**Q.38.** The molecular weight of a compound is  $C_2H_6O$  is

**Ans.** 46.08 g/mol

**Q.39.** The cross section of sewer which is suitable for both combined and separate system is

**Ans.** Egg-shaped sewer

**Q.40.** Net positive suction head (NPSH) is defined as

**Ans.** Net positive suction head (NPSH) is defined as the absolute pressure head at the inlet to the pump, minus the vapor pressure head (in absolute units) plus the velocity head.

$$NPSH = \frac{P_1}{\rho g} - \frac{P_v}{\rho g} + \frac{v_s^2}{2g}$$

**Q.41.** If specific weight of fluid is  $5000 \text{ N/m}^3$  then what will be the specific volume?

(a) 0.002

(b) 0.0002

(c) 0.005

(d) 500

**Ans.** (a)

0.002

**Q.42.** Maximum distance between the expansion joints in structures as per IS code is

**Ans.** 45 m

**Q.43.** Direct runoff is made up of

(a) Surface runoff, prompt interflow and channel precipitation

(b) Surface runoff, infiltration and evapotranspiration

(c) Rainfall and evaporation Answer

(d) Overland flow and infiltration

**Ans.** (a)

Surface runoff, prompt interflow and channel precipitation