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

EXAM DATE	**06/06/2024**
EXAM TIME	**5:00 PM – 7:00 PM**
SUBJECT	**Junior Engineer 2024 Civil Engineering (Paper-I)**

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

Q.1. Complete _____ Devi Namade

Ans. Namami

Q.2. Lake in Maharashtra

Ans. Pawna Lake
Upvana Lake
Lonar Lake
Venna Lake
Powai Lake
Ranbala Lake
Ramband Lake
Lonavala Lake
Charlottle lake
Khindsi Lake
Bhandandara Lake
Zilpi Lake

Q.3. Who has been conferred Kalidas Samman 2022?

Ans. Pt. Venkatesh Kumar Kalidas Samman is given by government of Madhya Pradesh in arts. Kumar belongs to Kirana and Gwalion Gharana.

Q.4. Hindu population percentage growth as per census 2011?

Ans. 16.8% Hindu population growth
79.8% Hindu
17.22% Muslim
2.3% Christian
1.7% Sikh
0.7% Buddhist
0.4% Jain

Q.5. Quit India movement was launched in

Ans. 8 August, 1942

Q.6. Pannalal Ghosh was born

Ans. 24 July, 1911 in Barishal, Bangladesh also known as Amal Jyoti Ghosh. He was an Indian flute player.
He was a disciple of Allauddin Khan.
He is the pioneer of Indian Classical flute.

Q.7. Which is the largest fresh water lake in India?

Ans. Wular lake in Jammu and Kashmir other freshwater lakes Loktal lake in Manipur and Barapani lake in Meghalaya.

Q.8. Prabhat Sharma is the exponent of

Ans. Flute

Q.9. Minimum age required for Vice-President?

Ans. 35 years

Q.10. Governor of Telangana

Ans. C.P. Radhakrishnan. He is also the Governor of Jharkhand. He got the additional charge after the resignation of Tamilisai Soundarajah.

Q.11. Formula of Baking Soda?

Ans. $NaHCO_3$
Sodium Bicarbonate

Q.12. Number of fundamental rights?

Ans. Six

Q.13. Rcently Common Wealth Games 2023 conducted in

Ans. 4 August, 2023 in Hasley Crawford Stadium in Part of Spain, Trinidaad

Q.14. Swarh Singh committee suggested how many fundamental duties

Ans. 10 duties Committee recommanded 8 fundamental duties.
Education opportunities to child between the age of 6 to 14 years was added by 86th constitutional Amendment Act, 2002

Q.15. Census 2011, 2nd highest literacy rate

Ans. Delhi (88.7%)
Kerala (93.91%)

Q.16. Which year Indigo revolt happened?

Ans. Bengal, 1859

Q.17. Supreme Court first established
Ans. The Supreme Court of Judicature at Fort William in Calcutta, was founded in 1774 by the Regulating Act of 1773.

Q.18. Arunachal Pradesh Mukhya Mantri Shramik Kalyan Yojana
Ans. Maternity benefits 1000 to 6000 etc.

Q.19. Sources of Constitution taken from Ireland
Ans. Directive Principle of State Policy and election of president and nomination of members of Rajya Sabha by President.

Q.20. Blood Sugar level rises in
Ans. Diabetes

Q.21. Unit of charge
Ans. Coulombs.

Q.22. Why raindrops are round in shape?
Ans. Surface tension.

Q.23. SI unit of work?
Ans. Joule also Neaton-meter.

Q.24. Vitamin B1 name
Ans. Thiamin (one of the water soluble vitamin)

Q.25. Next Census
Ans. 2024

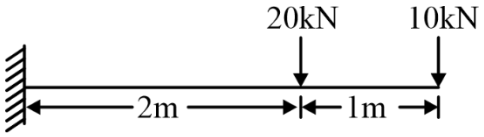
Q.26. Full form of Wifi
Ans. Wireless Fidelity

Q.27. White ants are not ants they are
Ans. Termites

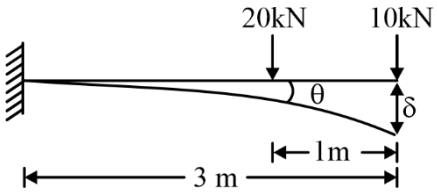
Q.28. Pollutants from oil refinery?
Ans. Benzene, Particulate matter, toxic metals Nitrozen Oxides, Sulphar Oxides, Methane, CO

SECTION C : CIVIL ENGINEERING

Q.1. In the given cantilever beam calculate the slope at fixed end.



Ans.



Slope = 0

Q.2. Maximum grade compensation

Ans. 75/R

Q.3. Size of modular brick

Ans. 19 mm × 9 mm × 9 mm

Q.4. Process of water coming out from concrete after placing is called

Ans. Bleeding

Q.5. Which of following will reduce the workability of concrete

(a) Aggregate is rounded
(b) Water cement ratio increase
(c) Aggregate cement ratio increase
(d) Superplasticizer

Ans. **(c)**

Aggregate cement ratio increase

Q.6. Which of the following Compensating error?

(a) Sag
(b) Temprature
(c) Improper ranging
(d) Human error

Ans. **(d)**

Human error

Q.7. In CBR test penetration value is calculated for which of the following depth?

Ans. 2.5 mm & 5 mm

Q.8. Kerb is provided for_____.

Ans. Kerb is provided for to provide a physical barrier between the road and the surrounding terrain.

Q.9. Advantage of Dumpy level

Ans. **Advantage of Dumpy level**

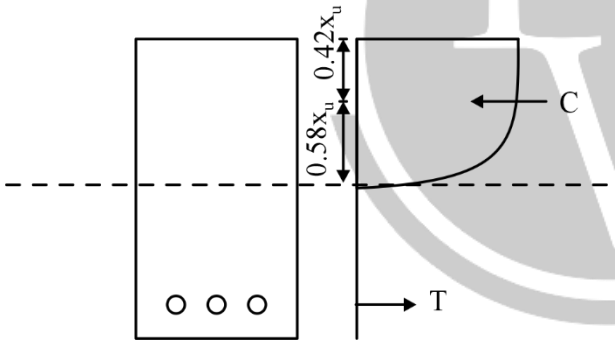
- The dumpy level is very simple to use.
- In comparison to theodolite and total stations the cost of the dumpy level is very low.
- The dumpy level requires very few adjustments to be set up.
- The dumpy level has high optical power.
- It provides an extremely accurate level of reading.
- Bubbles can be adjusted from any angle or side.
- This can be accomplished with any three screws on hand.

Disadvantage of Dumpy level.

- Disadvantages of dumpy level: Vertical angles are impossible to quantify.
- Only a horizontal plane can be measured with a dumpy level, and horizontal angles are not very accurate.
- They can only be used in good lighting conditions.
- At dusk or in dimly lit places, you can't use a dumpy.

Q.10. In LSM the distance of compressive force from the neutral axis will be equal to

Ans. $0.58X_u$



Q.11. Distance travel by vehicle after application of brake to stoping point?

Ans. Braking distance

Q.12. Advantage of separate sewarage system

Ans. **Advantages:**

1. Size of the sewers is small
2. Sewage load on treatment unit is less
3. Rivers are not polluted
4. Storm water can be discharged to rivers without treatment.

Disadvantage:

1. Sewerage being small, difficulty in cleaning them
2. Frequent choking problem will be their.
3. System proves costly as it involves two sets of sewers

4. The use of storm sewer is only partial because in dry season the will be converted into dumping places and may get clogged.

Q.13. Which of the following is not a working of Road Safety Sign Board.

(a) traffic speed (b) traffic volume calculation

(c) vahcle convenience (d) precaution

Ans. (b)

Q.14. permissible limit for chloride for public drinking water.

Ans. 250 mg/l

Q.15. liquid limit = 50%, assume I_P as I_P of A line calculate plastic limit

Ans. I_P of A line = 0.73 (w_L – 20)

I_P of A line = 0.73 (50 – 20)

I_P of A line = 21.9

Plastic limit = $w_L - I_P = 50 - 21.9 = 28.1$ %

Q.16. In sieve analysis of soil percentage retain on 4.75 mm sieve is 50% and percentage retain on 2 mm sieve is 90%. What will be the size of soil particle.

Ans. Size of particle = D_{10} = 2 mm

Q.17. In a long column, buckling occur when

Ans. $P > P_{cr}$

Q.18. As per allen hazen the coffiecient of permeability k is

Ans. $C(D_{10})^2$

Q.19. Percentage retain on 4.75 mm is 40%, percentage retain on 75μ is 15% then classification of soil will be

Ans. GM

Q.20. Crop period is the time period between sowing and harvesting, base period is time between first and last watering, then

Ans. Crop period > base period

Q.21. Requirement of water for 15 days is 60 cm, rainfall is 15 cm, calculate duty of irrigation?

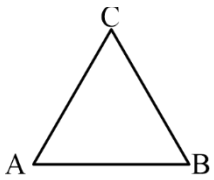
Ans. Delta = 60 – 15

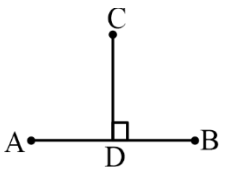
Duty = 864 B/Delta

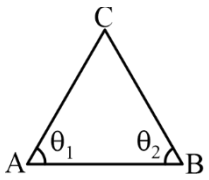
Duty = 864 × 15/45

Duty = 288 ha/cumec

Q.22. Which of the following represents correct principle of surveying for locating of point.

(a) 

(b) 

(c) 

Ans. All three are correct

Q.23. How many hours bricks is immersed in water before testing

Ans. 24 hours

Q.24. Concrete workability is reduced by

(a) Increase water cement ratio

(b) Increase aggregate cement ratio

(c) Increase rounded aggregate

(d) Increase superplastisizer

Ans. **(b)**

Increase aggregate cement ratio

Q.25. In cement concrete bleeding occurs due to

Ans. Increase water content

Q.26. Which of the following type of cement is used for the construction of sewage affected with sulphate?

Ans. Sulphate resistance cement.

Q.27. What is the reason behind the rounded shape of water droplet?

Ans. Surface tension

Q.28. When the fluid properties do not change with respect to time, then the flow is known as

Ans. Steady Flow

Q.29. Which of the following conditions applicable for Bernoull's equation?

(a) Compressible

(b) Incompressible

(c) Unsteady

(d) Rotational

Ans. Incompressible

Q.30. Moody's chart provides a relation between?

Ans. Moody's chart provides a relationship between the Darcy-Weisbach friction factor, the Reynolds number, and the relative roughness of the pipe.

Q.31. On increasing Chezy's coefficient the discharge?

Ans. Increases

Q.32. In LSM the desigen strength of steel used for Fe415 is

Ans. 0.87 f_y

$0.87 \times 415 = 361.05$ MPa

Q.33. Specific gravtiy of stone lies between?

Ans. 2-3

Q.34. In soundness test of OPC 53 cement edge thickness will be?

Ans. 10 mm

Q.36. In a U-tube manometer right limb is open to atmospheric pressure and in left limb it is connected to a liquid container height of liquid in right limb is h_2 and in left limb is h_1, if $h_2 > h_1$ then pressure will be

Ans. Positive gauge pressure

Q.37. Shear force = 60 kN, b = 200 mm, d = 300 mm calculate shear stress

Ans. Shear stress $= \frac{V_u}{bd} = \frac{60 \times 1000}{200 \times 300} = 1\,\text{MPa}$

CIVIL ENGINEERING