

PROVISIONAL ANSWER KEY

Question Paper Code:	83/2017/OL
Category Code:	055/2016
Exam:	Assistant Engineer Civil (SR for ST Only)
Medium of Question:	English
Date of Test	11-10-2017
Department	Local Self Govt. Department
Alphacode	A

Question1:-Where did Benjamin Bailey establish the first printing press in Kerala ?

- A:-Kozhikode
- B:-Kochi
- C:-Kottayam
- D:-Alapuzha

Correct Answer:- Option-C

Question2:-In which year the Freedom of Information Act was replaced by the Right to Information Act ?

- A:-2003
- B:-2005
- C:-2007
- D:-2009

Correct Answer:- Option-B

Question3:-Who is called 'Martin Luther of the East' ?

- A:-Poikayil Yohannan
- B:-Abraham Malpan
- C:-Pambadi John Joseph
- D:-M. C. Joseph

Correct Answer:- Option-B

Question4:-Who is the present President of Pukasa ?

- A:-Vaisakhan
- B:-M. K. Sanu
- C:-Kadammanitta Ramakrishnan
- D:-U. A. Khader

Correct Answer:- Option-A

Question5:-On which date in the year 1936 Temple Entry Proclamation was made by the Travancore ruler Sri Chithira Tirunal Balarama Varma ?

- A:-January 1
- B:-April 13
- C:-October 2
- D:-November 12

Correct Answer:- Option-D

Question6:-Who wrote 'Sabdikkunna Kalappa' ?

- A:-S. K. Pottakkad
- B:-Vaikom Muhammad Basheer
- C:-Kesava Dev
- D:-Ponkunnam Varkey

Correct Answer:- Option-D

Question7:-By the Indian Constitution, who has the power to make a 'Proclamation of Emergency' ?

- A:-President
- B:-Vice President
- C:-Prime Minister
- D:-Chief Minister

Correct Answer:- Option-A

Question8:-Which of the following organs can be donated only by a live donor ?

- A:-Heart
- B:-Intestine
- C:-Kidney
- D:-Eye

Correct Answer:- Option-C

Question9:-"Intha ulakathile oru jaathi oru matham oru kadavul", who said these words ?

- A:-Thycaud Ayya
- B:-Ayya Vaikundar
- C:-Sree Narayana Guru
- D:-Ayyankali

Correct Answer:- Option-A

Question10:-Which Constitution Amendment Act incorporated the terms 'Socialist' and 'Secular' into the preamble of the Indian Constitution ?

- A:-` 40^(th)` Amendment
- B:-` 41^(st)` Amendment
- C:-` 42^(nd)` Amendment
- D:-` 43^(rd)` Amendment

Correct Answer:- Option-C

Question11:-Among these women leaders who participated in the agitation against the Travancore Diwan Sir C. P. Ramaswamy Ayyar ?

- A:-Kuttimalu Amma
- B:-Anna Chandi
- C:-Akkamma Cheriyan
- D:-Lalitha Prabhu

Correct Answer:- Option-C

Question12:-Who founded Sidhasramam at Alathur in Palakkad ?

- A:-Chattampi Swamikal
- B:-Sree Narayana Guru
- C:-Swami Vagbhatananda
- D:-Brahmananda Sivayogi

Correct Answer:- Option-D

Question13:-Who authored the book "The Ministry of Utmost Happiness" ?

- A:-Kiran Desai
- B:-Anita Desai
- C:-Amish Tripathi
- D:-Arundathi Roy

Correct Answer:- Option-D

Question14:-Which is the official language of Pakistan ?

- A:-Hindi
- B:-Sindhi
- C:-Urdu
- D:-Punjabi

Correct Answer:- Option-C

Question15:-Who founded the newspaper "Swadesabhimani" ?

- A:-K. Ramakrishna Pillai
- B:-Vakkom Abdul Khadir Maulavi
- C:-Balakrishna Pillai
- D:-Mohammed Abdul Rahiman

Correct Answer:- Option-B

Question16:-In connection with which movement in Kerala, Savarna Jatha was organized ?

- A:-Vaikom Satyagraha
- B:-Guruvayur Satyagraha
- C:-Non Co-operation Movement
- D:-Civil Disobedience Movement

Correct Answer:- Option-A

Question17:-In which Indian City Napier Museum is situating ?

- A:-Chennai
- B:-Thiruvananthapuram
- C:-Delhi
- D:-Kolkata

Correct Answer:- Option-B

Question18:-Name the woman social reformer who was nominated to the Cochin Legislative Assembly to advise about the Namboothiri bill.

- A:-Parvathi Nenmenimangalam
- B:-Arya Pallam

C:-Lalithambika Antharjanam

D:-Ammu Swaminathan

Correct Answer:- Option-B

Question19:-Who started 'Paccha Malayalam Movement' ?

A:-Vallathol Narayana Menon

B:-Kumaran Asan

C:-Kerala Varma Valiyakoyi Thampuran

D:-Kodungallur Kunhikkuttan Thampuran

Correct Answer:- Option-D

Question20:-

Which was organized on the pattern of the Servants of India Society of Gopalakrishna Gokhale ?

A:-N.S.S.

B:-S.N.D.P.

C:-Atma Vidya Sangham

D:-Yogakshema Sabha

Correct Answer:- Option-A

Question21:-Among the following which is true for one way slab ?

A:- $B > L > 2B$

B:- $L < 2B$

C:- $L = B$

D:- $L > 2B$

Correct Answer:- Option-D

Question22:-What is the section modulus of a beam of circular in shape with radius R ?

A:- $\frac{\pi R^3}{4}$

B:- $\frac{\pi R^4}{4}$

C:- $\frac{\pi R^5}{8}$

D:- $\frac{\pi R^2}{8}$

Correct Answer:- Option-A

Question23:-In treatment of water what for sedimentation with coagulation is done ?

A:-To remove iron and manganese

B:-To remove foul gases

C:-To remove bacteria

D:-Remove fine colloidal particles

Correct Answer:- Option-D

Question24:-What is an impermeable formation which contain water but are not capable of transmitting ?

A:-Aquifuge

B:-Aquifer

C:-Aquiclude

D:-Artesian well

Correct Answer:- Option-C

Question25:-Which among the following is not a road junction at the same elevation ?

A:-Diamond interchange

B:-Unchannelized intersection

C:-Channelized intersection

D:-Round about

Correct Answer:- Option-A

Question26:-Among the properties of cement, to determine the compressive strength (cube strength), what should be the face area of cement mortar cube prepared for conducting the compression test ?

A:- 50 cm^2

B:- 15 cm^2

C:- 225 cm^2

D:- 176.63 cm^2

Correct Answer:- Option-A

Question27:-What is the average rate of loss such that the volume of rainfall in excess of that rate will be equal to direct run-off ?

A:-Run-off coefficient

B:-Infiltration index

C:-Infiltration capacity

D:-Surface retention

Correct Answer:- Option-B

Question28:-Which among the following is the ratio of modulus of elasticity of steel to the modulus of elasticity of concrete ?

- A:-Modular ratio
- B:-Poisson's ratio
- C:-Slenderness ratio
- D:-None of these

Correct Answer:- Option-A

Question29:-Which among the following is the construction in the form of cluster of closely spaced piles used for tying up of ships ?

- A:-Fender
- B:-Trestles
- C:-Dolphins
- D:-Moles

Correct Answer:- Option-C

Question30:-What is meant by the strength of a section ?

- A:-Moment of resistance offered by a section
- B:-Section modulus
- C:-Maximum bending stress
- D:-Moment of inertia of the section

Correct Answer:- Option-A

Question31:-What is the name of the wedge shaped unit at the crown of an arch ?

- A:-Skew back
- B:-Voussoir
- C:-Soffit
- D:-Key

Correct Answer:- Option-D

Question32:-What is the minimum water content at which a soil will just begin to crumble when rolled into a thread approximately 3 mm in diameter ?

- A:-Liquid limit
- B:-Shrinkage limit
- C:-Plastic limit
- D:-Plasticity index

Correct Answer:- Option-C

Question33:-In Critical Path Method (CPM) what does an arrow represent ?

- A:-Critical path
- B:-Event
- C:-Activity
- D:-Float

Correct Answer:- Option-C

Question34:-A simply supported beam of span l carries a point load W at the centre of the beam. What will be the bending moment diagram ?

- A:-Triangle
- B:-Two equal and opposite rectangles
- C:-Rectangle
- D:-Parabola with maximum ordinate at the centre of the beam

Correct Answer:- Option-A

Question35:-If the fore bearing of a line is 130° what is the back bearing of that line ?

- A:-S 40° E
- B:-N 40° W
- C:-S 50° E
- D:-N 50° W

Correct Answer:- Option-D

Question36:-If the centre of gravity of a plane vertical surface 2 m long and 1 m wide immersed in water, is at a depth of 2 m from the free surface of water, what is the total pressure on the surface ?

- A:-1000 kg
- B:-2000 kg
- C:-4000 kg
- D:-500 kg

Correct Answer:- Option-C

Question37:-How many points (or switches) will be there in a turn out ?

- A:-1

B:-2

C:-3

D:-4

Correct Answer:- Option-B

Question38:-Find the maximum torque transmitted by a shaft of 100 mm diameter, if maximum shear stress induced to shaft is 16 N/mm^2 .

A:-31400 N-m

B:-314 N-m

C:-3140000 N-m

D:-122.65 N-m

Correct Answer:- Option-A

Question39:-In case of steel column section, what is a fillet ?

A:-Outer edge of bottom flange

B:-Junction between flange and web

C:-Outer edge of top flange

D:-None of these

Correct Answer:- Option-B

Question40:-As per IS Code for the design of steel structures, what is the maximum deflection of a loaded beam ?

A:- $\frac{1}{300}$ of span

B:- $\frac{1}{325}$ of span

C:- $\frac{1}{165}$ of span

D:- $\frac{1}{200}$ of span

Correct Answer:- Option-B

Question41:-By which of the following the final size of town will be anticipated ?

A:-Green belt

B:-Zoning

C:-Eopolis

D:-Polis

Correct Answer:- Option-A

Question42:-A simply supported beam made of steel is having an effective span of 4 m. What is the section modulus required for beam section if the safe bending stress is 165 N/mm^2 . Take total load including superimposed load and dead load as 3 kN/m.

A:- $\frac{30 \times 10^6}{165} \text{ mm}^3$

B:- $\frac{60 \times 10^6}{165} \text{ mm}^3$

C:- $\frac{30}{165} \text{ mm}^3$

D:- $\frac{60}{165} \text{ mm}^3$

Correct Answer:- Option-B

Question43:-When direct ranging is done is chain surveying ?

A:-When the distance between two stations are too large and the intervening ground is a hill

B:-When the two stations are not intervisible

C:-When the two stations are intervisible

D:-When a pond obstructs laying of chain along true alignment

Correct Answer:- Option-C

Question44:-What is the name of cross drainage work if the canal crosses the drain at a higher elevation than the drain ?

A:-Sluice

B:-Level cross

C:-Super passage

D:-Aqueduct

Correct Answer:- Option-D

Question45:-If a point 60 cm above horizontal plane is 20 cm in front of vertical plane then where will be its plan, when the scale of drawing is 1 : 10 ?

A:-2 cm below XY line

B:-2 cm above XY line

C:-6 cm above XY line

D:-6 cm below XY line

Correct Answer:- Option-A

Question46:-If a ground water body is separated from main ground water by a relatively impermeable stratum of small areal extent located above main ground water body, then what type of aquifer it is ?

A:-Perched aquifer

B:-Confined aquifer

C:-Artesian aquifer

D:-None of these

Correct Answer:- Option-A

Question47:-Which property of cement among the following is determined using vicat apparatus ?

A:-Compressive strength

B:-Fineness

C:-Soundness

D:-Setting time

Correct Answer:- Option-D

Question48:-What is negative skin friction ?

A:-Upward drag acting on a pile during driving by surrounding soil

B:-Downward drag acting on a pile due to downward movement of surrounding soil

C:-Static skin friction on the shaft during Dutch cone penetration test

D:-Skin friction acting on friction piles by the surrounding soil

Correct Answer:- Option-B

Question49:-Which among the following grades denotes the concrete mix 1 : 1 : 2 (one part of cement + one part of fine aggregate + 2 parts of coarse aggregate) ?

A:-`M_(10)`

B:-`M_(15)`

C:-`M_(20)`

D:-`M_(25)`

Correct Answer:- Option-D

Question50:-

Which among the following is a temporary dam constructed for facilitating construction works ?

A:-Buttress dam

B:-Detention dam

C:-Coffer dam

D:-Debris dam

Correct Answer:- Option-C

Question51:-What is plasticity index ?

A:-Liquid limit – natural water content

B:-Liquid limit – plastic limit

C:-Natural water content – plastic limit

D:-Ratio of liquidity index to flow index

Correct Answer:- Option-B

Question52:-What for a mouth piece is introduced ?

A:-To increase value of coefficient of discharge of an orifice

B:-To decrease the loss of head due to sudden enlargement

C:-To decrease the loss of head due to sudden contraction

D:-To decrease the loss of head at entrance of orifice

Correct Answer:- Option-A

Question53:-If the gauge pressure is minus what will be the absolute pressure ?

A:-Atmospheric pressure minus gauge pressure

B:-Atmospheric pressure plus gauge pressure

C:-Negative gauge pressure plus vacuum pressure

D:-Vacuum pressure minus negative gauge pressure

Correct Answer:- Option-A

Question54:-

In the case of primary tension failure, in which of the following sections tension cracks appear ?

A:-Under-reinforced section

B:-Over-reinforced section

C:-Balanced section

D:-None of these

Correct Answer:- Option-A

Question55:-What is the built up area of a building at any floor level ?

A:-Plinth area

B:-Carpet area

C:-Floor area

D:-Coverage

Correct Answer:- Option-C

Question56:-Which among the following is a compression of soil mass resulting from a long term static load and consequent escape of pore water ?

- A:-Compaction
- B:-Consolidation
- C:-Sedimentation
- D:-Thixotropy

Correct Answer:- Option-B

Question57:-In a roof truss, which of the following is used to support roofing material ?

- A:-Tie beam
- B:-Base plate
- C:-Purlins
- D:-Gusset plate

Correct Answer:- Option-C

Question58:-According to PIEV theory for calculating stopping sight distance which among the following is not included in the total reaction time ?

- A:-Perception time
- B:-Interchanging time
- C:-Emotion time
- D:-Volition time

Correct Answer:- Option-B

Question59:-Which of the following is inversely proportional to coefficient of permeability ?

- A:-Voids ratio
- B:-Diameter of soil particles
- C:-Unit weight of flowing fluid
- D:-Viscosity of flowing fluid

Correct Answer:- Option-D

Question60:-Which among the following is a channel aligned roughly at right angles to the contours ?

- A:-Side slope canal
- B:-Contour canal
- C:-Ridge canal
- D:-Navigation canal

Correct Answer:- Option-A

Question61:-A cantilever of length L carries a point load W at free end. If the length of the cantilever is doubled what load at free end will cause the same deflection at free end ?

- A:-8W
- B:-2W
- C:-W/2
- D:-W/8

Correct Answer:- Option-D

Question62:-Name the process of obtaining hand cut samples from stiff cohesive soils, which is trimmed to regular shapes and wrapped to get undisturbed samples.

- A:-Auger boring
- B:-Percussion boring
- C:-Rotary boring
- D:-Chunk sampling

Correct Answer:- Option-D

Question63:-In which of the following types of foundation Rolled Steel Joists are used ?

- A:-Raft foundation
- B:-Well foundation
- C:-Grillage foundation
- D:-Inverted arch foundation

Correct Answer:- Option-C

Question64:-Which among the following is determined by Hardy Cross method ?

- A:-Correction in discharge
- B:-Total input discharge required
- C:-Head loss
- D:-Velocity through pipes

Correct Answer:- Option-A

Question65:-

What is the portion of a brick obtained by cutting the brick longitudinally into two equal parts ?

- A:-King Closer
- B:-Queen Closer
- C:-Half bat
- D:-Bewelled closer

Correct Answer:- Option-B

Question66:-When a doubly reinforced beam is preferred ?

- A:-When depth of beam is more
- B:-When depth of beam is to be limited
- C:-When width of beam is to be limited
- D:-When the ultimate moment of resistance is less than that of singly reinforced beam

Correct Answer:- Option-B

Question67:-What is defined as the difference between the amount of chlorine added to water and the amount of chlorine remaining at the end of a specified contact period ?

- A:-Chlorine demand
- B:-Break-point chlorination
- C:-Free residual chlorine
- D:-Super chlorination

Correct Answer:- Option-A

Question68:-Which fitting is used to hold two rails together ?

- A:-Tie bars
- B:-Clip
- C:-Bearing plates
- D:-Fish plates

Correct Answer:- Option-D

Question69:-Which among the following is known as bending equation ?

- A:- $\frac{M}{y} = \frac{f}{l} = \frac{E}{R}$
- B:- $\frac{M}{l} = \frac{f}{y} = \frac{E}{R}$
- C:- $\frac{M}{l} = \frac{f}{R} = \frac{E}{y}$
- D:- $\frac{M}{EI} = \frac{f}{y} = \frac{r}{R}$

Correct Answer:- Option-B

Question70:-In a leveling back sight is noted as 1.200 on a bench mark whose reduced level is 100.000 and fore sight is noted as 1.200. Then the instrument is shifted to a new position and back sight is noted as 1.100. What is the height of instrument for the second set up ?

- A:-100.100
- B:-100.200
- C:-101.100
- D:-101.200

Correct Answer:- Option-C

Question71:-Which among the following is responsible for 'quick sand' ?

- A:-Effective overburden pressure
- B:-Shear strength of soil particles
- C:-Seepage pressure
- D:-Cohesion between soil particles

Correct Answer:- Option-C

Question72:-What is the advantage of coning of wheels of railway vehicles ?

- A:-Helps to avoid tilting of rails
- B:-Helps to keep the flange of the wheel in contact with the side of the rail
- C:-Helps to avoid wear and tear due to slipping action
- D:-Helps to keep the vehicle centrally aligned on a straight and level track

Correct Answer:- Option-D

Question73:-What is the polar moment of inertia of circular section of radius 2 cm ?

- A:- $\pi \text{ cm}^4$
- B:- $\pi // 2 \text{ cm}^4$
- C:- $\pi // 4 \text{ cm}^4$
- D:- $\pi // 8 \text{ cm}^4$

Correct Answer:- Option-B

Question74:-Which among the following is not included in the shape test for road aggregates ?

- A:-Flakiness index
- B:-Elongation index
- C:-Angular number

D:-Group index

Correct Answer:- Option-D

Question75:-For what purpose a venturimeter is used ?

A:-To determine the velocity of flow at a required point in a pipe

B:-To find out the discharge of a liquid flowing in a pipe

C:-To find out time of emptying a tank

D:-To determine the loss of head due to sudden enlargement

Correct Answer:- Option-B

Question76:-Which among the following is used to indicate the area of land acquired along the road alignment by the highway organization ?

A:-Road margins

B:-Kerb

C:-Shoulders

D:-Right of way

Correct Answer:- Option-D

Question77:-Among the following, in which filter backwashing can not be done for cleaning the filter ?

A:-Slow sand filter

B:-Rapid sand filter

C:-Pressure filter

D:-Rapid gravity filter

Correct Answer:- Option-A

Question78:-What is the flow called if the depth of water in a channel is greater than the critical depth ?

A:-Shooting flow

B:-Torrential flow

C:-Critical flow

D:-Streaming flow

Correct Answer:- Option-D

Question79:-Which among the following is a flow, whose streamlines may be represented by a curve ?

A:-One-dimensional flow

B:-Two-dimensional flow

C:-Three-dimensional flow

D:-Irrotational flow

Correct Answer:- Option-B

Question80:-What is called the line produced by the intersection of two roof surfaces forms an external angle less than 180° ?

A:-Hip

B:-Ridge

C:-Valley

D:-Eaves

Correct Answer:- Option-C

Question81:-Which among the following is incorrect in the case of a combined footing ?

A:-The centres of gravity of column loads and soil reaction remain in same vertical line

B:-Allowable bearing pressure of soil should be less than the ratio of total load to the area of footing

C:-Combined footing is treated as an inverted floor supported by columns and loaded by earth reactions

D:-None of these

Correct Answer:- Option-B

Question82:-Which among the following is suitable for half brick wall ?

A:-English bond

B:-Flemish bond

C:-Stretcher bond

D:-Header bond

Correct Answer:- Option-C

Question83:-Determine the crippling load (collapsing load) of a solid round bar of length 3.14 m used as a strut with both ends hinged whose moment of inertia of cross section is $30 \times 10^4 \text{ N/mm}^2$ and Young's modulus is $2 \times 10^5 \text{ N/mm}^2$.

A:- $188.4 \times 10^6 \text{ N}$

B:- $15 \times 10^3 \text{ N}$

C:- $60 \times 10^3 \text{ N}$

D:-6085.44 N

Correct Answer:- Option-C

Question84:-In limit state method what is the minimum percentage of steel required ?

- A:- $0.85 \cdot f_y$
 - B:- $85 \cdot f_y$
 - C:- $0.138 \cdot f_{ck} \cdot bd^2$
 - D:- $f_{ck} \cdot bd^2$
- Correct Answer:- Option-B

Question85:-Which among the following is not included in the temporary adjustments of a dumpy level ?

- A:-Setting up
 - B:-Centering
 - C:-Leveling up
 - D:-Elimination of parallax
- Correct Answer:- Option-B

Question86:-The ratio of stress to the corresponding strain is a constant within the elastic limit. Which among the following is the above constant ?

- A:-Modulus of elasticity
 - B:-Modulus of rigidity
 - C:-Elastic Moduli
 - D:-All of the above
- Correct Answer:- Option-D

Question87:-Which among the following is the ratio between inertia force and gravity force ?

- A:-Weber's number
 - B:-Reynold's number
 - C:-Froude's number
 - D:-Euler's number
- Correct Answer:- Option-C

Question88:-In case of volume batching for concrete which of the following is correct ?

- A:-Cement is measured on the basis of volume
 - B:-All ingredients are measured by weight
 - C:-Fine aggregate and coarse aggregate are measured by weight
 - D:-Fine aggregate and coarse aggregate are measured using a box which have volume equal to volume of one bag of cement
- Correct Answer:- Option-D

Question89:-Which among the following is the bottom level of windows in a building ?

- A:-Lintel
 - B:-Plinth
 - C:-Sill
 - D:-Ridge
- Correct Answer:- Option-C

Question90:-Which among the following is used for area calculation ?

- A:-Bowditch rule
 - B:-Simpson's rule
 - C:-Whole circle bearing system
 - D:-Reiteration method
- Correct Answer:- Option-B

Question91:-What is an oxidation ditch ?

- A:-Primary treatment system
 - B:-Extended aeration system
 - C:-Sludge return system
 - D:-Sludge disposal system
- Correct Answer:- Option-B

Question92:-Which among the following can be used as a method for seasoning for removal of sap from timber ?

- A:-Hot and cold open tank treatment
 - B:-Creosoting
 - C:-Boiling
 - D:-Sir Abel's Process
- Correct Answer:- Option-C

Question93:-Which among the following is a structure constructed for energy dissipation below spillways ?

- A:-Penstocks
- B:-Flash board

C:-Intake structure

D:-Stilling basin

Correct Answer:- Option-D

Question94:-In case of open channel flow, for calculating the specific energy what will be taken as datum ?

A:-Static Energy Line

B:-Kinetic Energy Line

C:-Bottom of channel

D:-Horizontal line passing through level of critical depth

Correct Answer:- Option-C

Question95:-Which among the following may be prescribed as design mix ?

A:-`M_(5)`

B:-`M_(10)`

C:-`M_(15)`

D:-`M_(35)`

Correct Answer:- Option-D

Question96:-In which of the following, the sludge digestion and sedimentation takes place in the same chamber ?

A:-Trickling filter

B:-Sludge digestion tank

C:-Septic tank

D:-Imhoff tank

Correct Answer:- Option-C

Question97:-When water contains suspended matter and acids or alkalies which pump can be recommended ?

A:-Air lift pumps

B:-Rotary pump with gear

C:-Rotary pump with cams

D:-None of these

Correct Answer:- Option-A

Question98:-In calculating fluctuation in demand for water, what is coincident draft ?

A:-Maximum daily demand added to fire draft

B:-Maximum hourly demand added to annual draft

C:-Percent of annual draft for time t in days

D:-Per capita demand of the city

Correct Answer:- Option-A

Question99:-In which of the following Sopwith staff can be classified ?

A:-Target staff

B:-Solid staff

C:-Folding type staff

D:-Self reading type staff

Correct Answer:- Option-D

Question100:-Among the following which is not classified under surface sources of water ?

A:-Streams

B:-Stored rain water

C:-Springs

D:-Impounded reservoirs

Correct Answer:- Option-A