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PhD ENTRANCE EXAM RESULT , VMSBUTU

Answer Key for Civil Engg. Branch

Question	Options
1 : A statement of the quantitative research question should:	<ol style="list-style-type: none">1) Extend the statement of purpose by specifying exactly the question (the researcher will address2) Help the research in selecting appropriate participants, research methods, measures, and materials3) Specify the variables of interest4) All the above
2 : In the process of conducting research 'Formulation of Hypothesis" is followed by	<ol style="list-style-type: none">1) Statement of Objectives2) Analysis of Data3) Selection of Research Tools4) Collection of Data
3 : In order to pursue the research, which of the following is priorly required?	<ol style="list-style-type: none">1) Developing a research design2) Formulating a research question3) Deciding about the data analysis procedure4) Formulating a research hypothesis
4 : What are the core elements of a Research Process?	<ol style="list-style-type: none">1) Introduction; Data Collection; Data Analysis; Conclusions and Recommendations2) Executive Summary; Literature Review; Data Gathered; Conclusions, Bibliography3) Research Plan; Research Data; Analysis; References4) Introduction; Literature Review; Research Methodology; Results; Discussions and Conclusions

Question	Options
5 : What does the term 'longitudinal design' mean?	1) A study completed far away from where the researcher lives 2) A study which is very long to read. 3) A study with two contrasting cases. 4) A study completed over a distinct period of time to map changes in social phenomena
6 : Which institution approved the '6G Vision Framework'	1) NASSCOM 2) NITI Aayog 3) ITU 4) IMF
7 : Which company has launched ChatGPT rival Bard in European Union, Brazil and other nations?	1) Google 2) Microsoft 3) Apple 4) Infosys
8 : What is AIRAWAT ?	1) Submarine 2) AI supercomputer 3) 5G-enabled drone 4) Recently discovered exoplanet
9 : The Union Government has exempted which institution from the purview of the Right to Information Act, 2005?	1) RBI 2) SEBI 3) CERT-In 4) Election Commission of India
10 : What is 'PSiFI system'	1) A primary method of waste disposal 2) A system for recognizing human emotions 3) A wearable device for monitoring blood pressure 4) A voice recognition AI tool

Question	Options
<p>11 : In a mixture of 60 litres, the ratio of milk to water is 2 : 1. If this ratio is to be 1 : 2, then the quantity of water (in litres) to be further added is ?</p>	<p>1) 20 2) 30 3) 40 4) 60</p>
<p>12 : The cost of Type 1 rice is Rs. 15 per kg and Type 2 rice is Rs.20 per kg. If both Type 1 and Type 2 are mixed in the ratio of 2 : 3, then the price per kg of the mixed variety of rice is ?</p>	<p>1) 19.5 2) 19 3) 18 4) 18.5</p>
<p>13 : A cistern is normally filled in 8 hours but takes two hours longer to fill because of a leak in its bottom. If the cistern is full, the leak will empty it in ?</p>	<p>1) 20 2) 28 3) 36 4) 40</p>
<p>14 : A starts business with Rs. 3500 and after 5 months, B joins with A as his partner. After a year, the profit is divided in the ratio 2 : 3. What is B's contribution in the capital ?</p>	<p>1) 8000 2) 8500 3) 9000 4) 7500</p>
<p>15 : A tank is 25 m long, 12 m wide and 6 m deep. The cost of plastering its walls and bottom at 75 paise per sq. m, is ?</p>	<p>1) 456 2) 458 3) 558 4) 568</p>
<p>16 : If MADE is coded as 12236 and BAD is coded as 123, then how will DECK be coded as ?</p>	<p>1) 36212 2) 34312 3) 36201 4) 44412</p>
<p>17 : Five balls L1, L2, L3, L4 and L5 are kept one above the other (not necessarily in the same order). L1 is just above L5 and just below L4. L2 is just above L3 and just below L5. How many balls are above L2 ?</p>	<p>1) 2 2) 3 3) 4 4) 4</p>
<p>18 : Mayank is the son of Chhaya. Chhaya and Deepa are sisters. Gayatri is the mother of Deepa. If Naman is the son of Gayatri , How is Mayank related to Naman ?</p>	<p>1) Nephew 2) Brother 3) Father 4) Son</p>

Question	Options
19 : Which number will replace the question mark(?) in the following series? 98, 95, 86, 82, 66, ?, 36 ?	1) 58 2) 60 3) 61 4) 63
20 : If 5 November 2019 was Tuesday, then what was the day of the week on 5 December 2011 ?	1) Tuesday 2) Monday 3) Sunday 4) Saturday
21 : A clay layer 5 m thick in field takes 300 days to attain 50% consolidation with condition of double drainage. If the same clay layer is underlain by hard rock then the time taken to attain 50% consolidation will be	1) 300 days 2) 600 days 3) 1000 days 4) 1200 days
22 : 2. In an incompressible fluid if the two components of velocity are $u = x^2 + yz$ and $v = y^2 + xz$ then the third component of velocity (w) to satisfy the continuity equation is	1) $w = z^2 + xy + f(x, y)$ 2) $w = -2(x + y)z + f(x, y)$ 3) $w = z^2 + xy + f(x, y, z)$ 4) $w = -2(x + y)z + f(x, y, z)$
23 : The basic differential equation of Spatially Varied Flow with increasing discharge is based on the	1) Manning's equation 2) Momentum equation 3) Energy equation 4) Continuity equation
24 : Theoretically the best cross-section for a lined canal is	1) Semi-circular 2) triangular 3) trapezoidal 4) none of these
25 : The ratio of the inertia and gravitational force acting in any flow, ignoring other forces is called	1) Euler number 2) Weber number 3) Froude number 4) Reynolds number
26 : If an infinite slope of clay at a depth 4 m has cohesion of 2 t/m ² and unit weight of 1 t/m ³ , then the stability number is	1) 0.1 2) 0.2 3) 0.4 4) 0.5

Question	Options
27 : In CBR test surcharge weights are used to	1) Simulate worst natural moisture conditions 2) Increase density of the sample 3) Simulate the effect of overlaying pavement 4) Prevent horizontal movement of piston during test
28 : For laminar flow between parallel plates separated by a distance $2h$, head loss varies	1) Directly as h 2) Inversely as h^2 3) Inversely as h^3 4) Directly as h^2
29 : A hyetograph is a plot of	1) Cumulative rainfall vs. time 2) Rainfall intensity vs. time 3) Rainfall depth vs. duration 4) Discharge vs. time
30 : If a beam is subjected to a constant bending moment along its length, then the shear force will	1) also have a constant value everywhere along its length 2) be zero at all sections along the beam 3) be maximum at the center and zero at the ends 4) zero at the center and maximum at the ends
31 : If failure in shear along 45° planes is to be avoided, then a material subjected to uni-axial tension should have its shear strength equal to at least	1) Tensile strength 2) Compressive strength 3) Half the difference between the tensile and compressive 4) Half the tensile strength
32 : A simply supported beam with width b and depth d carries a central load w and undergoes deflection δ at the centre. If the width and depth are interchanged, the deflection at the center of the beam would attain the value	1) $(d/b)\delta$? 2) $(d/b)^2\delta$? 3) $(d/b)^3\delta$? 4) $(d/b)^{1/2}\delta$?

Question	Options
33 : If v is the speed in km per hour; the super elevation to be provided in horizontal curves of radius R in hill roads is given by	1) $v^2/127R$ 2) $v^2/225R$ 3) $v^2/17.5 R$ 4) $(v+8)/127R$
34 : In a simply supported beam of length $(L + 2a)$ with equal overhangs (a) and carrying a uniformly distributed load over its entire length, Bending Moment at the middle point of the beam will be zero if	1) $L=2a$ 2) $L= 4a$ 3) $L < 2a$ 4) $L > 2a$
35 : When the lever arm of a reinforced concrete beam is z and width of beam is b , then the maximum shear stress in a beam subjected to shear force F will be equal to	1) Fb/z 2) F/bz 3) Fz/b 4) Fzb
36 : Moment of inertia of a triangular section of base b and height h about an axis passing through its center of gravity and parallel to the base is	1) $bh^3/36$ 2) $bh^3/12$ 3) $bh^3/4$ 4) $bh^3/8$
37 : Mass moment of inertia of a uniform thin rod of mass M and length L about its midpoint and perpendicular to its length is	1) $2/3 (ML^2)$ 2) $1/3 (ML^2)$ 3) $3/4(ML^2)$ 4) $4/3 (ML^2)$
38 : Minimum permissible speed on high speed roads, is decided on the basis of	1) 20 percentile cumulative frequency 2) 40 percentile cumulative frequency 3) 15 percentile cumulative frequency 4) 30 percentile cumulative frequency
39 : Standard BOD is measured at	1) $200c -1$ day 2) $250c -3$ day 3) $300c -5$ day 4) $200c -5$ day

Question	Options
40 : For a given discharge, the efficiency of sedimentation tank can be increased by	1) Increasing the depth of tank 2) Decreasing the depth of tank 3) Increasing the surface area of tank 4) Decreasing surface area of tank
41 : A coastal city produces municipal solid waste (MSW) with high moisture content, high organic materials, low calorific value and low inorganic materials. The most effective and sustainable option for MSW management in that city is	1) Composting 2) Dumping in sea 3) Incineration 4) Landfill
42 : The cleaning of slow sand filter is done by	1) reversing the direction of flow of water 2) passing air through the filter 3) passing solution of alum and lime through filter 4) scrapping of the top layer of sand and admitting water
43 : The ratio of oxygen available to the oxygen required for stabilisation of sewage is called the	1) relative stability 2) biological oxygen demand 3) bacterial stability factor 4) oxygen ion concentration
44 : 24. A shaft is subjected to bending moment M and a torque T simultaneously. The ratio of the maximum bending stress to maximum shear stress developed in the shaft, is	1) M/T 2) $2M/T$ 3) T/M 4) $2T/M$
45 : A cantilever beam AB, fixed at A and carrying a load P at the free end B, is found to deflect by w at the midpoint of AB. The deflection of B due to a load $W/2$ at the midpoint will be	1) $w/4$ 2) $w/2$ 3) $2w$ 4) w
46 : If the sand in situ is in its densest state, the relative density of sand is	1) 0 2) 1 3) Between 0 and 1 4) Greater than 1

Question	Options
47 : Gypsum is added to Portland cement during its manufacture so that it may	1) Accelerate the setting time 2) decrease the burning temperature 3) Retard the setting time 4) facilitate grinding
48 : The function of an expansion joint in rigid pavement is to	1) Relieve warping stress 2) Relieve shrinkage stresses 3) Resist stress due to expansion 4) Allow free expansion
49 : Eutrophication of water bodies is caused by the	1) Discharge of toxic substance 2) Excessive discharge of nutrients 3) Excessive discharge of suspended solids 4) Excessive discharge of chlorides
50 : The diameter of bolt hole can exceed the diameter of the bolt by about	1) 2 to 5mm 2) 1 to 3mm 3) 1.5 to 2mm 4) more than 5mm

Best of luck for the future!