PhD ENTRANCE EXAM RESULT , VMSBUTU

Answer Key for Mechanical Engineering Branch

Question	Options
1 : If AIRLINE is written as ENILRIA7, then RAILWAY will be written as	1) YAWILAR8 **2) YAWLIAR7** 3) YAWILAR7 4) YAWLIAR8
2 : Which number is wrong in the series 2, 6, 15, 31, 56, 93?	1) 31 2) 56 **3) 93** 4) 6
3 : If PINK is coded as 1691411, then RED will be coded as	1) 1963 2) 1853 3) 1954 **4) 1854**
4 : Statement 1: A is bigger than B but shorter than C; Statement 2: D is smaller than C and bigger than A; Statement 3: B is greater than D; If statement 1 and statement 2 are true, statement 3 will be	1) "TRUE" **2) "FALSE"** 3) uncertain 4) none
5 : Arrange the following words in a meaningful sequence : 1-sun, 2- rain, 3-child, 4-rainbow,5-happy	**1) 2, 1, 4, 3, 5** 2) 3, 2, 1, 4, 5 3) 2, 1, 3, 4, 5 4) 4, 5, 1, 3, 2
6 : What is the probability of getting two tails when two coins are tossed?	1) 0.33333333333333 2) 0.16666666666667 3) 0.5 **4) 0.25**

Question	Options
7 : A man covers a distance of 110 km between two cities in 10 hours. He travelled partly on foot at 9 km/hr and partly on a bicycle at 15 km/hr. Find the distance travelled on foot.	1) 92 2) 94 **3) 60** 4) 80
8 : Vikas and Mohan working together can complete a work in 6 days. If Vikas alone completes the same work in 10 days, in how many days Mohan alone can complete the same work?	1) 13 2) 14 **3) 15** 4) 16
9 : The HCF of 2/3, 8/9, 64/81 and 10/27 is	1) 0.66666666666667 2) 160/3 **3) 2/81** 4) 160/81
10 : A 60 liter mixture of milk and water contains 10% water. How much water must be added to make water 20% in the mixture?	1) 8 liters **2) 7.5 liters** 3) 7 liters 4) 6.5 liters
11 : Who Invented the 3-D printer?	1) Nick Holonyak 2) Elias Howe **3) Chuck Hull** 4) Christiaan Huygens
12 : Which Veda depicts the information about the most ancient Vedic age culture?	1) Atharvaveda 2) Samaveda 3) Yajurveda **4) Rig Veda**
13 : The first pico satellite of India is-	1) GSAT-4 2) ANUSAT 3) INSAT **4) STUDSAT**
14 : Which of the following is known as the Diamond City of India?	1) Aurangabad 2) Jaipur **3) Panna** 4) Jhiria

Question	Options
15 : In which year Forest Conservation Act was passed?	**1) 1980** 2) 1988 3) 1986 4) 1990
16 : What is a hypothesis in research?	**1) A conclusion drawn from data analysis** 2) A summary of research findings 3) A measurement of data accuracy 4) A statement of predicted relationship between variables
17 : What is the purpose of a literature review in research?	**1) To analyze data** 2) To summarize research findings 3) To collect primary data 4) To identify the research gaps
18 : What is a dependent variable in research?	1) The variable that is manipulated by the researcher 2) The variable that remains constant throughout the research **3) The variable that is measured and observed** 4) The variable that is not relevant to the research question
19 : What is a research design?	1) A plan for data analysis 2) A method for data collection **3) A framework for conducting research** 4) A statistical technique
20 : What is the appropriate statistical analysis for comparing means between two groups?	**1) T-test** 2) Chi-squared test 3) Analysis of variance (ANOVA) 4) Regression analysis

Question	Options
21 : The supply of working fluid to the engine to suit the load conditions is controlled by	1) Flywheel **2) Governor** 3) Throttle valve 4) All of these
22 : Thermoplastic materials are those materials which	1) are formed into shape under heat and pressure and results in a permanently hard product **2) do not become hard with the application of heat and pressure and no chemical change occurs** 3) are flexible and can withstand considerable wear under suitable conditions 4) are used as a friction lining for clutches and brakes
23 : The locus of a point on the circumference of a circle rolling on the outside of a fixed circle is known as	1) Cycloid 2) Involute **3) Epicycloid** 4) Hypocycloid
24 : If the centre distance of a simple gear system having involute teeth is decreased then	**1) The velocity ratio remains constant and pressure angle decreases** 2) The velocity ratio remains constant and pressure angle remains constant 3) The velocity ratio decreases and pressure angle decreases 4) The velocity ratio decreases and pressure angle remains constant
25 : For a dynamic coupling of a vibrating system	1) only the mass matrix is nondiagonal **2) the mass and damping matrices are nondiagonal** 3) only the stiffness matrix is nondiagonal 4) only the damping matrix is nondiagonal

Question	Options
26 : The most desirable method of increasing the yield strength of mild steel is	**1) grain refinement** 2) cold working 3) solute additions 4) precipitation hardening
27 : Consider a non-homogeneous system of linear equations representing mathematically an over-determined system. Such a system will be	**1) Consistent having a unique solution** 2) Consistent having many solutions 3) Inconsistent having unique solution 4) Inconsistent having no solution
28 : The damping force depends on the frequency of the applied force in the case of	1) viscous damping 2) Coulomb damping **3) hysteretic damping** 4) solid damping
29 : The maximum number of hinges on one link in a constrained mechanism with n links is given by	1) 2n 2) 3n **3) n/2** 4) none
30 : The pressure angle of a cam is the angle between the direction of the follower motion and normal to the	**1) pitch curve** 2) base circle 3) pitch circle 4) prime circle
31 : The buckling load for a given material depends on	1) slenderness ratio and area of cross-section 2) Poisson’s ratio and modulus of elasticity 3) slenderness ratio and modulus of elasticity **4) slenderness ratio, area of cross-section and modulus of elasticity**

Question	Options
32 : Bending moment at a section in a beam has the maximum value where	1) the load function has zero value **2) shear force is zero or changes sign** 3) the load has maximum value 4) shear force is maximum
33 : Let A be an n-square matrix and AX=0 has only zero solution then	1) A is not invertible **2) A is invertible** 3) All elements of Matrix are 0s 4) Such matrix is not possible
34 : Crater wear occurs in cutting tools at	**1) The rake surface** 2) The principal flank 3) The auxiliary flank 4) All of these
35 : For micro welding applications, preferred welding process is	1) Thermit welding 2) Arc welding **3) Laser welding** 4) All of these
36 : Inclination angle of a turning tool is measured on its	1) Reference plane **2) Cutting plane** 3) Orthogonal plane 4) Normal plane
37 : Tundish is commonly used in which of the following casting process	**1) Continuous casting** 2) Die casting 3) Centrifugal casting 4) Investment casting
38 : Deterioration of surface integrity in grinding occurs mainly due to	1) Rapid material removal 2) Large cutting forces **3) High grinding temperature** 4) Rapid wear of the wheel

Question	Options
39 : One of the biggest advantage of centrifuging in casting process is	1) To produce axis-symmetric casting **2) To ensure proper filling of mould** 3) To prevent hot tears in casting 4) None
40 : Which abrasive is used for achieving maximum machining rate, while machining tungsten carbide in ultrasonic machining?	1) Aluminum oxide 2) Glass particles **3) Boron carbide** 4) Silicon carbide
41 : Which of the following is not a fixed gauge?	**1) Pneumatic gauge** 2) Snap gauge 3) Plug gauge 4) Taper limit gauge
42 : For the same tool-work material combination in a lathe work, the highest cutting velocity can be taken while	**1) Straight turning** 2) Thread cutting 3) Reaming 4) Knurling
43 : Which boiler generally uses the high steam and low water safety valve?	1) Cochran boiler 2) Cornish boiler **3) Lancashire boiler** 4) Stirling boiler
44 : Shock waves in nozzles would occur while turbines are operating	**1) at overload conditions** 2) at part load conditions 3) above critical pressure ratio 4) at all off-design conditions
45 : The size of engine cylinder is referred in terms of	1) diameter and bore 2) displacement and efficiency **3) bore and stroke** 4) bore and length
46 : During sensible cooling of air, the wet bulb temperature	1) increases **2) decreases** 3) increases than decrease 4) remain constant

Question	Options
47 : The internal energy of a substance depends upon	**1) temperature** 2) pressure 3) volume 4) entropy
48 : Thermal efficiency of a thermal power plant is of the order of	1) 0.15 2) 0.2 **3) 0.3** 4) 0.6
49 : The process used for making the bolts and nuts are	1) hot piercing 2) extrusion 3) cold peening **4) cold heading**
50 : Which of the following materials is best weldable with itself	1) stainless steel 2) copper **3) mild steel** 4) cast iron

Best of luck for the future!