HSST MATHEMATICS ONLINE EXAM

EXAM DATE:18-03-2016

1.Who among the following is the winner of Jnanapida award in 2015?

A.Ragveer Chaudary*

B.Leeladhar Mandloi

C.K.V.Chaudary

D.S.Ramanugam

Ans:A

2.Who is selected as the Miss Universe in 2015?

A.Ariyana Guetirus

B.Ohvia Gordan

C.Pia Alonso*

D.Maria Laiguna

Ans:C

3.Who among the following is the winner of Ezhuthachan award in 2015?

A.Sugathakumari

B.K.R.Meera

C.Puthussery Ramachandran*

D.Meloor Vasudevan

Ans:C

4.The French open 2015 Women Championship is won by which of the following player?

A.Venus Williams

B.Serina Williams*

C.Simonia Halep
D.Maria Sharapova

Ans:B

5.Who among the following is the first Chairman of New Development Bank(NDB)?

A.K.V.Kamath*

B.Nirbhay Sharma

C.Dineshkumar Sharma

D.Harshit Saumithra

Ans:A

6.The Scheme “Project Arrow”is related to which among the following term?

A.Medicine

B.Postal Department*

C.Telephone department

D.Infrastructure facility

Ans:B

7.In 2015 which among the following crop in Kerala get the “Baumasuchika”title?

A.Pokkali Rice

B.Vazhakulam Pinapple

C.Wayanad Gadhakasala Rice

D.Changalikodan*

Ans:D

8.In 2015 Which among the following film won the title “Suvarnachakoram”in Kerala International Film Festival?

A.Shadow behind the moon

B.Ottal*

C.Ozhivu Divasathe kali

D.Jalal’s story

Ans:B

9.The American Spacecraft New Horizon is launched to study which among the following planet?

A.Moon

B.Pluto*

C.Mars

D.Venus

Ans:B

10.Which amongt the following Constitutional Amendment Act is related to the Land Boundary Agreement between India and Bangladesh?

A.100*

B.119

C.110

D.112

Ans:A

11.The best teacher is one who is capable of----------

A.Giving a good result

B.Inspiring the students to learn*

C.Completing the topic in time

D.Helping the students in preparing notes

Ans:B

12.'Learning by Doing'principle is reflected in-------

A.Realism

B.Idealism

C.Pragmatism*

D.Naturalism

Ans:C

13.In inductive reasoning,one proceeds from

A.Particular to general*

B.General to particular

C.Rational to empirical

D.None of these

Ans:A

14.Which of the following is a projective aid for teaching?

A.Still model

B.Working model

C.Charts

D.Slides*

Ans:D

15.The most significant system of evaluation is--------

A.Formative evaluation

B.Summative evaluation

C.Continuous and Comprehensive evaluation*

D.Continuous evaluation

Ans:C

16.Characteristics of descriptive research studies are

A.They do not involve hypothesis formulation and testing

B.They use logical methods of inductive-deductive reasoning to arrive at generalizations*

C.They never employ methods of randomization in sampling

D.The variables and procedures are not described accurately and completely

Ans:B

17.Conditions or characteristics that the experimenter manipulates or controls in his or her attempt to ascertain their relationship to observed phenomena are called------

A.Independent variables*

B.Dependent variables

C.Confounding variables

D.None of these

Ans:A

18.Types of experimental validity are

A.Content and construct validity

B.Statistical validity

C.Internal validity

D.Internal validity,external validity,statistical validity and construct validity*

Ans:D

19.Qualitative research focuses on--------

A.In depth interview only

B.Observations only

C.Document analysis,in-depth interview and observations*

D.Document analysis only

Ans:C

20.Probability based sampling method is---------

A.Stratified sampling*

B.Purposive sampling

C.Random sampling

D.Judgement sampling

Ans:A

21.The case known as'Privy Purse Case'is:

A.R.C.Cooper v.Union of India

B.Ashok Kumar Yadav v.Haryana

C.West Bengal v.Nripendra Nath

D.Madhav Rao Scindia v Uol*

Ans:D

22.In which of the following cases did the Supreme Court declare Salwa Jundum as unconstitutional?

A.Kihoto Hollohan v.Zachillu

B.Pratap Singh v.Jharkhand

C.Nandini Sundar v.Chattisgarh*

D.Pooran v.State of U.P

Ans:C

23.No law made by the Parliament and having extra-territorial operation will be deemed

A.Invalid*

B.Void

C.Constitutional

D.Valid

Ans:A

24.A legislative Bill which contains only provision dealing with giving of a guarantee by the Government of India is

A.Financial Bill

B.A money Bill*

C.Ordinary Bill

D.All of the above

Ans:B

25.The total number of Ministers including the Prime Minister in the Council of Ministers should be not exceed ----------percent of the total members of the House of the People.

A.15*

B.20

C.10

D.None of the above

Ans:A

26.The maximum amount of fine that can be imposed on the respondent who violates a protection order issued under the Protection of Women from Domestic Violence Act is

A.Ten Thousand Rupees

B.Fifty Thousand Rupees

C.Twenty Thousand Rupees*

D.None of these

Ans:C

27.National Parks are notified under

A.Indian Forests Act

B.Forest Conservation Act

C.Environment Protection Act

D.Wild Life Protection Act*

Ans:D

28.The minimum age of donor of human organ is

A.20 years

B.18 years*

C.21 years

D.25 years

Ans:B

29.Under the Right to Education Act,'elementary education'means education from first class to

A.Fourth class

B.Seventh class

C.Fifth class

D.Eighth class*

Ans:D

30.Under the Right to Information Act,disclosure of an information on an incident concerning the economic interest of the State

A.Is not at all exempted

B.Can made 15 year after the incident

C.Is normally exempted from disclosure but can be released 20 years after the incident*

D.Is normally exempted from disclosure but can be released 15 years after the incident

Ans:C

31.The area of a triangle is equal to that of a square whose side measures 60 m.The side of the triangle whose corresponding altitude is 90 m is

A.60 m

B.40 m

C.80 m*

D.90 m

Ans:C

32.The height of an arc of a circle is 10 cm and its diameter is 12.5 cm.The chord of the arc is of length

A.10 cm*

B.12 cm

C.8 cm

D.11 cm

Ans:A

33.A sphere of radius 4 cm is carved from a homogeneous sphere of radius 8 cm and mass 160 g.The mass of the smaller sphere is

A.80g

B.60g

C.40g

D.20g*

Ans:D

34.A pendulum swings through an angle of $30^0$and describes an arc 8.8 cm in length.The length of the pendulum is(Use Pie=22/7)

A.8.8 cm

B.16.8 cm*

C.12.4 cm

D.10.2 cm

Ans:B

35.A solid cube is cut into two cuboids of equal volumes.The ratio of the total surface area of the given cube to that of one of the cuboids is

A.2:1

B.3:2*

C.4:1

D.4:3

Ans:B

37.$2^{1000000}$mod 7 is

A.5

B.3

C.2*

D.4

Ans:C

38.When $x^5+x^4+5x^2-3$ is divided by x+2,the remainder is

A.0

B.1*

C.2

D.3

Ans:B

39.A tree with 7 vertices has---------edges.

A.8

B.7

C.5

D.6*

Ans:D

40.The number of distinct spanning tress of K_4 is

A.16*

B.12

C.32

D.8

Ans:A

41.If the identity element e?S exists in a semigroup(S,?),then it is a

A.Group

B.Groupoid

C.Monoid*

D.None of the above

Ans:C

42.The number of generators of$(Z_{24},+)$is

A.2

B.6

C.8*

D.10

Ans:C

43.A Sylow 3-subgroup of a group of order 12 has order

A.2

B.3*

C.1

D.12

Ans:B

45.Let Q be the field of rational numbers and z_2 is a field modulo 2.Then the polynomial $f(x)=x^3-9x^2+9x+3$ is

A.Irreducible over Q but reducible over Z_2*

B.Irreducible over both Q and Z_2

C.Reducible over but irreducible over Z_2

D.Reducible over both Q and Z_2

Ans:A

48.Let V be a finite dimensional vector space,*I* be the identity transformation on V,then the null space of *I* is

Ans:{0}

49.If V is a vector space with dim V=n,then the dimension of the hyperspace of V is

A.n

B.n-1*

C.n+1

D.0

Ans:B

50.Let V be a vector space of all 2 x 2 matrices over R.Let *T* be the linear mapping *T*:v->v such that T(A)=AB-BA where B=[2 1[First row]0 3[Second row]].Then the nullify of *T* is

A.1*

B.2

C.3

D.4

Ans:A

51.Banach space is a

A.Complete normed vector space *

B.Normed vector space

C.Complete vector space

D.None of the above

Ans:A

52.Which of the following is true?

A.All normed spaces are inner product spaces

B.All inner product spaces are normed spaces*

C.All inner product spaces are Banach spaces

D.All inner product spaces are Hilbert spaces

Ans:B

53.Banach space is a Hilbert space if

A.Pythagorean theorem holds

B.Projection theorem holds

C.Parallelogram law holds*

D.None of the above

Ans:C

54.If *T* is a bounded linear operator on a Hilbert space *H*,which of the following is not true?

A.*T* is normal if *T* is self-adjoint

B.*T* is normal if *T* is unitary

C.*T* is self-adjoint if *T* is normal*

D.None of the above

Ans:C

57.(x?y)+(x'+y')is equal to

Ans:1

58.Let a be any element in a Boolean algebra B.If a+x=1 and ax=0,then

Ans:x=a'

59.Which of the following is reflexive?

A.l^2*

B.l^1

C.$L^1[a,b]$

Ans:A

61.If S is a non-empty set of real numbers,then

A.Inf S=Sup S

B.Inf S=-Sup(-S)*

C.Inf S=Sup(-S)

D.Inf S=-Sup S

Ans:B

62.Every infinite set has

A.An uncountable subset

B.A countable subset*

C.Both countable and uncountable subsets

D.None of the above

Ans:B

63.A real valued function f has discontinuity of the second kind at x=a if

A.f(a+)exist only

B.f(a-)exist only

C.Neither f(a+)nor f(a-)exist*

D.Both f(a+)and f(a-)exist

Ans:C

65.Every open set of real numbers is the union of

A.Countable collection of disjoint closed intervals

B.Uncountable collection of disjoint closed intervals

C.Countable collection of disjoint open intervals*

D.Uncountable collection of disjoint open intervals

Ans:C

66.A set E is nowhere dense if

A.Closure of E contains non-empty open sets

B.Closure of E contains non-empty open sets*

C.Closure of E contains empty open set

D.None of the above

Ans:B

67.If $f_1$and f_2 are two real-valued bounded functions defined on[a,b]then for every partition p on[a,b]

Ans:U(p,*f*1+*f*2)lessthan equaltoU(*p*,*f*1)+U(*p*,*f*2)

68.If f:[a,b]->R is continuous and monotonic function then

Ans:*f* is Riemann integrable on[a,b]

69.Which of the following is true?

A.The set[0,1]is not countable

B.If $E_1$and E_2 are Lebesgue measurable,then E_1?$E_2$is Lebesgue measurable

C.The family *M* of Lebesgue measurable sets is an algebra of sets

D.All of the above*

Ans:D

71.If *f* satisfies the conditions of Lagrange's mean value theorem and if *f*'(x)=0?x?[a,b],then which of the following is true?

Ans:*f* is constant on[a,b]

72.lim/z->0 z(bar)/z is

A.0

B.1

C.1/2

D.Does not exist*

Ans:D

76.The image of the unit circle $|z|=1$ under the transformation $w=2z+z^2$ is

A.Circle

B.Straight line

C.Parabola

D.Cardioid*

Ans:D

77.If X is any set,T is a collection of all subsets of X then(X,T)is

A.Discrete topology*

B.Indiscrete topology

C.Trivial topology

D.None of the above

Ans:A

78.Let X and Y are topological spaces.The function f is a homemorphism if

A.f:X->Y is a bijective function

B.f is continuous

C.f^{-1}:Y->X is continuous

D.All of the above*

Ans:D

79.Every compact subset of a Hausdorff space is

A.Closed set*

B.Open set

C.Null set

D.None of the above

Ans:A

80.The order and degree of the differential equation

$d/dx(d^2y/dx^2)^4=0$ is

A.1,4

B.2,4

C.3,1*

D.3,4

Ans:C

81.The value of Wronskian $W(x,x^2,x^3)$is

A.$2x^2$

B.$2x^4$

C.$2x^3$*

D.x^2

Ans:C

84.The orthogonal trajectory of the family of curves $x^2-y^2=k$ is given by

A.$x^2+y^2=c$

B.xy=c*

C.y=c

D.x=0

Ans:B

86.Stirling's formula is the ---------of Gauss' forward and backward formulae.

A.Arithmetic mean*

B.Geometric mean

C.Harmonic mean

D.None of the above

Ans:A

87.The interpolating polynomial of the highest degree which corresponds the functional values $f(-1)=9, f(0)=5, f(2)=3, f(5)=15$ is

Ans:x^2-3x+5

89.The minimizing curve must satisfy a differential equation called

A.Lagrange's equation

B.Euler-Lagrange equation*

C.Gauss equation

D.None of the above

Ans:B

90.A solid figure of revolution,for a given surface area,has maximum volume is in the case of

A.A circle

B.A sphere*

C.An ellipse

D.A parabola

Ans:B

91.A rigid body moving in space with one point fixed has degree of freedom

A.3*

B.1

C.6

D.9

Ans:A

95.Using Fourier series,representing x in the interval [-pie,pie],the sum of the series

1-1/3+1/5-1/7+……is

A.0

B.1

C.pie/2

D.pie/4*

Ans:D

96.The only idempotent t-conorm is

A.Algebraic sum

B.Drastic union

C.Standard fuzzy union*

D.Bounded sum

Ans:C

97.Using fuzzy arithmetic operations on intervals[4,10]/[1,2]is

A.[4,5]

B.[2,10]*

C.[2,8]

D.[4,20]

Ans:B

100.Let X be a non-empty compact Hausdorff space.If every point of ?? is a limit point of X,then

A.X is disjoint

B.X is countable

C.X is uncountable*

D.None of the above

Ans:C