

**All subjects quiz questions (PHYSICS CYCLE) with their answers by
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NOTE: SOME QUESTIONS MIGHT HAVE WRONG ANSWERS MARKED. IT'S BETTER IF YOU GO THROUGH EACH AND EVERY QUESTION ON YOUR OWN.

MATLAB QUIZ

19. What is the purpose of the axis ('equal') command in MATLAB? (0.5 Points) * 

- To plot axes of equal length
- To set equal scaling for the x- and y-axes
- To align the axes symmetrically
- To set the plot axis at origin

21. Which of the following is a valid way to specify dashed line style in a plot? (0.5 Points) * 

- `plot(x, y, '--')`
- `plot(x, y, 'dashed')`
- `plot(x, y, 'line')`
- `plot(x, y, 'solid')`

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22. How do you generate a linearly spaced vector from 1 to 10 with 100 points in MATLAB? (0.5 Points) * 

- `linspace(1,10,100)`
- `linspace(1,10,100)`
- `space(1,10,100)`
- `range(1,10,100)`

23. Which command is used to display the current directory in MATLAB? (0.5 Points) * 

- `cwd`
- `pwd`
- `currentdir`
- `dir`

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18. Which of the following command is used to plot a 2D line plot in MATLAB? (0.5 Points) *

plot2D()

plot()

draw()

graph()

4. Which of the following commands is used to perform element-wise multiplication in MATLAB?

(0.5 Points) *

A*B

A.*B

A.B

A dot B

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5. What is the purpose of the hold on command in MATLAB? (0.5 Points) * 

- It holds the value of a variable
- It holds the plot for further additions without erasing
- It pauses code execution
- It freezes all figures

6. Which command is used to enter into the editor window from command window? (0.5 Points) * 

- switch
- edit
- enter
- change

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7. What error will occur if you try to add two matrices A = [1 2; 3 4] and B = [5; 6] ? (0.5 Points) * 

- MATLAB will automatically resize the matrices
- MATLAB will produce a "Matrix dimensions must agree" error
- MATLAB will produce a "Syntax error"
- There will not be any error

8. Which of the following functions is used to add a legend to a plot? (0.5 Points) * 

- xlabel()
- ylabel()
- title()
- legend()

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9. To change the color of a line to red color in a plot,
which syntax can be used? (0.5 Points) *

- plot(x, y, 'r')
- plot(x, y, color='r')
- plot(x, y, 'red color')
- setColor(x, y, 'r')

10. What is the default color of a line in MATLAB if none
is specified? (0.5 Points) *

- Blue
- Red
- White
- Black

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10. What is the default color of a line in MATLAB if none is specified? (0.5 Points) *

Blue

Red

White

Black

11. What does the command xlabel('X-axis Label') do?

(0.5 Points) *

It labels the x-axis with the specified text

It sets the limits of the x-axis

It creates a legend for the plot

It adds a grid to the x-axis

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12. To save a figure as a JPEG file, which command is appropriate? (0.5 Points) *

- saveas(gcf, 'filename.jpg')
- print('filename.jpg')
- export_fig('filename.jpg')
- All of the above

13. Which command will plot multiple lines in one figure? (0.5 Points) *

- plot(x, y1, x, y2)
- lines(x, y1, y2)
- multipleplot(x, y1, y2)
- overlay(x, y1, y2)

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14. How can you suppress the output of a command in MATLAB? (0.5 Points) *



- By placing ; at the end of the command
- By placing , at the end of the command
- By using the command supress
- By placing : at the end of the command

15. In MATLAB, what does the command who display?

(0.5 Points) *



- List of functions
- List of all current variables in the workspace
- List of MATLAB toolboxes
- List of all figure windows

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16. Which command is used to plot in a log scale to both x and y axis? (0.5 Points) *



- semilogx
- semilogy
- loglog
- loglogxy

17. Find the error in the following code.

```
x=-10:1:10;  
y=-10:2:10;  
plot(x,y)
```

(0.5 Points) *



- Semicolon is required at the end of the plot command
- Syntax of plot is wrong
- Length of x and y should be same
- No error

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4. Which of the following is true about anonymous functions in MATLAB? (0.5 Points) * 

- They cannot return any values
- They can only be used inside loops
- They can accept multiple input arguments
- They must be defined in a separate file

5. In which of the following cases are anonymous functions most useful in MATLAB? (0.5 Points) * 

- When you need to define a simple function quickly for immediate use
- When you need to create large, complex programs
- When you need to create recursive functions
- When you need a function that works with symbolic math

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6. Which of the following generates a row vector 'v' with values from 1 to 5?

(0.5 Points) *



- $v = 1:5$
- $v = [1, 2, 3, 4, 5]$
- $v = \text{linspace}(1, 5, 5)$
- All of the above

7. What is the output of $A(:, 2)$ for the matrix $A = [1 2 3; 4 5 6; 7 8 9]$? (0.5 Points) *



- $[1 2 3]$
- $[2; 5; 8]$
- $[4 5 6]$
- $[2 3]$

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8. What will be the output for the MATLAB code:

```
x=[1:4]
f = @(x) x^2;
result = f(x);
disp(result); (0.5 Points) *
```

1 4 9 16

1 2 3 4

4 3 2 1

No output

9. Which command will return the dimensions of a matrix A?

(0.5 Points) *

size(A)

length(A)

shape(A)

dim(A)

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10. What will be the result of executing the following MATLAB code?

`f = @(x, y) x * y;`

`result = f(3, 4);`

`disp(result);` (0.5 Points) *

7

12

81

Error

11. How would you create a 3x3 matrix A with elements from 1 to 9 in MATLAB?

(0.5 Points) *

`A = [1, 2, 3; 4, 5, 6; 7, 8, 9]`

`A = [123; 456; 789]`

`A = 1:9`

`A = [1; 2; 3; 4; 5; 6; 7; 8; 9]`

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12. What is the role of the colon operator : in A(:, 2)?
(0.5 Points) *

- Selects all rows
- Selects all columns
- Selects elements from row 1 to row 2
- Selects all elements from matrix

13. How do you export the first row of matrix A and take its transpose?

(0.5 Points) *

- $A(1, :)'$
- $A(:, 1)'$
- $\text{transpose}(A(:, 1))$
- $A(1:2, :)$

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14. What will be the result of the following MATLAB code?

`f = @(x) x^2 + 2*x + 1;`

`g = @(y) f(y) + 5;`

`result = g(3);`

`disp(result); (0.5 Points) *` 

- 15
- 25
- 19
- 21

15. Which of the following is the correct syntax to define an anonymous function for the expression 'f=x+y' in MATLAB? (0.5 Points) * 

- `f = @(x, y) x + y`
- `f = @(x, y) {x + y}`
- `f = (x, y) -> x + y`
- `f(x, y) = x + y`

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16. What will be the output of the following MATLAB code?

```
f = @(x) x^2;
```

```
result = f(4);
```

disp(result); (0.5 Points) *

8

16

4

Error

17. How would you change the element in the second row and third column of matrix A to 10?

(0.5 Points) *

A(2, 3) = 10

A[2, 3] = 10

A = replace(A, 2, 3, 10)

set(A(2, 3), 10)

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18. How can you delete multiple rows in matrix A (3x3) in one command?

(0.5 Points) *



A([1 3], :) = []

A(:, [1 3]) = []

A([2, 4], :) = []

delete(A([1, 2], :))

19. What is an anonymous function in MATLAB?

(0.5 Points) *



A function that is stored in a separate file

A function that does not take any arguments

A function that is defined without being stored in a file

A function that uses global variables

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20. What is the result of the following command:

`ones(2,3) * 5?`

(0.5 Points) *

- A 2x3 matrix of zeros
- A 2x3 matrix where each element is 5
- A 3x2 matrix where each element is 5
- A scalar value of 5

21. How do you square each element of a matrix A?

(0.5 Points) *

- `A^2`
- `A.*A`
- `square(A)`
- `A*A`

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22. In MATLAB, anonymous functions can take which of the following as inputs? (0.5 Points) *

- Only scalar values
- Only matrices
- Variables, constants, or expressions
- Only string inputs

23. Which of the following correctly defines an anonymous function in MATLAB that adds 2 to its input? (0.5 Points) *

- $f = @(x) x+2$
- $f = @(x) \{x+2\}$
- $f(x) = x + 2$
- $f = (x) -> x + 2$

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BFE QUIZ

4. Which of the following are major sites for glycogen storage? (1 Point) *

- Adipose tissue
- Bones
- Muscle and liver
- Kidney and liver

5. Carbohydrates are defined as (1 Point) *

- Ketone derivatives
- Polyhydroxy aldehydes
- Only (a)
- (a) and (b)

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6. Which of the following is not a polymer of Glucose? (1 Point) *

Glycogen

Cellulose

Amylose

Insulin

7. Which one of the following is a monosaccharide? (1 Point) *

Maltose

Sucrose

Ribulose

Starch

8. Store carbohydrates in animals and plants from which glucose can be mobilized for energy production (1 Point) *

Starch and Glycogen

Glycogen and Cellulose

Glucose and Cellulose

Glycogen and Starch

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9. Strands of DNA are held together by (1 Point) *

- Ionic bonds
- Covalent bonds
- Phosphodiester bonds
- Hydrogen bonds

10. Choose the incorrect statement regarding DNA (1 Point) *

- DNA is made up of nitrogenous base, sugar and phosphate group.
- DNA is the molecule that is the hereditary material in all living cells.
- Genes are made of DNA, and so the genome itself.
- The bases found in DNA come in only three varieties: adenine, guanine, and cytosine.

11. The difference between the sugar molecules of DNA and RNA is (1 Point) *

- Absence of oxygen at 2-C
- presence of oxygen at 3-C
- absence of nitrogen at 3-C
- presence of nitrogen at 2-C

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12. Which one is incorrect about reducing sugar and non-reducing sugar (1 Point) *

- cupric ions of Benedict's solution reduced by reducing sugar but not by non-reducing sugar
- bonded aldehyde and ketonic group in reducing sugar while free aldehyde and ketonic group in non-reducing sugar
- monosaccharides are reducing sugar, and polysaccharides are non-reducing sugar
- cellobiose is an example of reducing sugar, while trehalose is non-reducing sugar

13. Which is not true for cellulose-based water filters? (1 Point) *

- high mechanical strength and hydrophobic properties
- biodegradable and chemical resistance
- removes contaminants and impurities
- large surface area and widely used in developing countries

15. Choose the best answer for DNA vaccine (1 Point) *

- Hosts' antibodies recognize pathogen's DNA sequence
- DNA vaccine works by stimulating the immune system to recognize pathogen's DNA sequence
- DNA vaccine expresses to produce protein in pathogen which stimulates an immune response
- DNA vaccine expresses to produce protein in host which stimulates an immune response

16. What is the basic principle of immunization and vaccination? (1 Point) *

- based on the number of B and T lymphocytes
- based on antigen-antibody interactions
- based on the property of memory of the immune system
- based upon the number of white blood cells

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17. Select the best answer for proteins (1 Point) *

- Proteins are translated from mRNA.
- Proteins synthesised by cells from the genetic information encoded in DNA.
- both (a) and (b)
- only (a) is true but not (b)

16. What is the basic principle of immunization and vaccination? (1 Point) *

- based on the number of B and T lymphocytes
- based on antigen-antibody interactions
- based on the property of memory of the immune system
- based upon the number of white blood cells

18. With regards to enzyme, this statement is incorrect (1 Point) *

- works on the principle of lock and key hypothesis
- substrate bind to their active site of an enzyme
- they catalyze the specific type of reaction without being consumed
- generally unstable at a wide range of temperatures and pH values

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19. Polymeric units of **Nucleotides** are (1 Point) *

- Proteins
- Polysaccharides
- DNA
- Lipids

20. The number of DNA molecules in each chromosome is (1 Point) *

- more than hundred
- one
- infinite
- None

21. Which cellular process correctly describes how proteins are produced using DNA's genetic information? (1 Point) *

- Photosynthesis converts DNA directly into proteins
- DNA is transcribed into mRNA, which is then translated into proteins by ribosomes
- Proteins are spontaneously formed when DNA unwinds
- Mitochondria extract proteins from DNA molecules

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22. Which enzyme is commonly used to break down oil spills? (1 Point) *

Amylase

Lipase

Cellulase

Protease

23. Which of the following is the primary lignolytic enzyme used in bio-bleaching? (1 Point) *

Laccase

Amylase

Cellulase

Protease

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4. The additional capability of brain as compared to CPU is (1 Point) *

Receiving

Processing

Adaptation

Storage

5. Signal transmission in brain occurs through (1 Point) *

Neurons

Brain

Spinal Cord

Skin

6. Function of left atrium is to (1 Point) *

Pushes oxygen poor blood

Pushes oxygenated blood

Receive oxygenated blood

Receive oxygen poor blood

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7. Hypercapnia is a condition in which (1 Point) *

- CO₂ level is high
- O₂ level is high
- CO level is low
- Water imbalance

8. LASIK is a type of (1 Point) *

- Regenerative surgery
- Reflective surgery
- Reverse surgery
- Refractive surgery

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9. Astigmatism is related to (1 Point) *

- Kidney
- Lungs
- Heart
- Eye

10. The function of pupil of eye is similar to that of camera's (1 Point) *

- Aperture
- Black point
- Card
- Lens

11. An ECG measures (1 Point) *

- Electrical signals
- Mechanical signals
- Temperature variation
- Visionary signals

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12. Myopia means (1 Point) *

- No sightedness
- Near sightedness
- New sightedness
- Far sightedness

13. The memory capacity of brain is approximately (1 Point) *

- 25 gigabytes
- 2.5 gigabytes
- 25 petabytes
- 2.5 petabytes

14. The biomaterial having best tissue-specific composition is (1 Point) *

- polymers
- ceramics
- composites
- extra cellular matrix

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15. Dialysate is (1 Point) *

- Filter machine
- Filtering liquid
- Effluent liquid
- None of them

16. Artificial kidneys can perform (1 Point) *

- Detoxification
- Filtration
- Blood pressure regulation
- All the above

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17. Pericardium is present around (1 Point) *

lungs

eyes

brain

heart

18. Rod cells are responsible for (1 Point) *

sharp image

color detection

motion detection

fine details in vision

19. Each minute how many cardiac cycles are completed on an average (1 Point) *

4

3

2

1

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21. In bradycardia, the rate of heartbeat is (1 Point) *

- normal
- Too high
- it stops
- too slow

22. Oxygenator works as (1 Point) *

- artificial heart
- artificial blood
- artificial lungs
- none of the above

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23. The average heartbeat rate is (1 Point) *

- 100-120 beats per minute
- 60-100 beats per minute
- 50-70 beats per minute
- 100-130 beats per minute

20. The volume of cardiac output is equal to (1 Point) *

- 5-5.6 L
- 5-7 L
- 3-5 L
- 1-3 L

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EMM QUIZ

Which metal is added to iron to manufacture stainless steel (1 Point) 

Titanium

Manganese

Tungsten

Chromium

What is the depth of water taken for efflorescence test (1 Point) 

3.5 cm

2.0 cm

3.0 cm

2.5 cm

The defect caused in Timber due to rupture of tissue in the circular direction is known as (1 Point) 

Cup Shakes

Ring Shakes

Heart Shakes

Ring Galls

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What is the minimum compressive strength required for a clay brick? (1 Point) 

- 3 KPa
- 3 MPa
- 3.5 KPa
- 3.5 MPa

A concrete contains which of the following items (1 Point) 

- Cement, Sand, Coarse aggregate and Water
- Cement, Coarse aggregate and Water
- Cement, Sand and Water
- Cement and Water

What is the approximate percentage of moisture present in a freshly cut timber? (1 Point) 

- <30%
- 35-45%
- >40%
- 30-40%

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Rayon comes under which type of fibre? (1 Point) 

Please select 3 options.

Synthetic fibre

Semi-synthetic fibre

Re-generated fibre

Man-made fibre

Bleeding of concrete comes under which category (1 Point) 

Compressive strength of concrete

Segregation of concrete

Workability of concrete

Tensile strength of concrete

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The efflorescence of brick is due to

- a) Soluble salts present in clay for making brick
- b) High porosity of brick
- c) High Silt content in brick earth
- d) High TDS content in the water mixed with clay **(1 Point)**

b, c and d

a and b

c and d

a, b and c

a, b and d

a and d

Moisture content for a good quality timber should be

- a) Less than 10%
- b) Less than 15%
- c) 15-25%
- d) 25-30% **(1 Point)**

Both a and b

Both c and d

Only b

only d

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What is the size of a modular brick with mortar layer?

- a) 20x10x10cm
- b) 19x10x9cm
- c) 19x9x8cm
- d) 19x9x9cm
- e) 20x10x9cm (1 Point) 

Both b and e

Both a and d

Only d

Only a

Only c

Both b and e

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Alumina and Iron in brick earth gives the bricks

- a) Plasticity and Colour, respectively
- b) Colour and Plasticity, respectively
- c) Resistance to shrinkage and colour, respectively
- d) Strength and Colour, respectively
- e) Both give Plasticity to brick earth (1 Point)

a, c and d

Both c and d

Both c and e

Only a

Only c

The following are the carbon content for different grade of steel. Choose the correct option for medium grade of carbon steel

- a) less than 0.25%
- b) 0.25-0.45%
- c) greater than 0.45% (1 Point)

Only a

Both a and b

Only b

Only c

Both b and c

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Which of the following is a form of decay in timber? (1 Point) 

All of these

Fungal attack

Wet Rot

Dry Rot

Nitrocellulose comes under which type of polymer (1 Point) 

Natural

Semi-synthetic

Synthetic

Which of the following is a defect due to improper seasoning? (1 Point) 

Spring

Cup

Bow

Twist

All of these

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The Compressive strength of Ordinary Portland cement is less than its Tensile strength (1 Point) 

False

Cannot be said

True

What is the primary advantage of using timber in construction?

- a) High strength-to-weight ratio
- b) Resistance to fire and corrosion
- c) Easy availability and affordability
- d) Versatility in design and aesthetics (1 Point) 

a and c

Only c

a and d

Only a and b

c and d

Only d

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In electric field, "PVC" is used to make (1 Point) 

Pipes

Wire cover

Switch

Tungsten wire

What will be the effect of using a high water/cement ratio in a cement concrete (1 Point) 

High tensile strength

High workability

Low workability

High compressive strength

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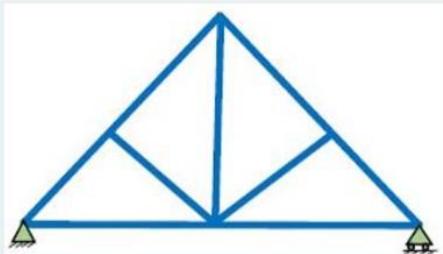
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Choose the appropriate combinations from the followings:

- a) Statically Indeterminate and stable
- b) Statically Determinate and stable
- c) Statically Determinate but externally unstable
- d) Statically Indeterminate but externally unstable

(1 Point)



c

a

d

b

A body is in equilibrium under the action of three forces. If the forces are P, Q and R, then:

- (a) $P + Q + R = 0$
- (b) $P * Q * R = 0$
- (c) $P^2 + Q^2 + R^2 = 0$

(1 Point)

Only a

Only C

Only b

None of these

In a determinate truss, how many support reactions are typically present? (1 Point)

2

4

3

1

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What is the key step in the method of sections for analysing trusses?

- a) Determining the support reactions
- b) Cutting the truss into sections to isolate specific members
- c) Applying equilibrium equations to one part of the section
- d) Calculating the deflection of the truss under load  (1 Point)

Only b

Only d and a

a, b and c

Only a

Only c

a, b and d

What is the condition for a truss to be classified as statically determinate?  (1 Point)

The number of members is less than the number of joints

The number of unknown forces equals the number of equilibrium equations

The number of members equals the number of joints plus three

The truss experiences no deformation under load

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Which factor influences the selection of a specific truss analysis method?  (1 Point) 

- Truss geometry
- Construction schedule
- Material cost
- Aesthetic considerations

A single railcar moving along a track has how many degrees of freedom?  (1 Point)

- 3
- 4
- 1
- 2

What is the purpose of analyzing truss structures in engineering practice?  (1 Point)

- To ensure structural stability and safety
- To predict the environmental impact of the truss
- To determine the aesthetic appeal of the truss
- To calculate the cost of construction

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A force system is said to be coplanar if:

- a. The lines of action of all the forces intersect at a single point.
- b. The forces all lie in the same plane.
- c. The forces are all parallel.
- d. The forces are all equal in magnitude.

(1 Point)

Only a

Both c and d

Both a & b

Only b

None of the above

Two forces, q_1 and q_2 , are separated by a distance r . The force between them is:

- a. Directly proportional to q_1 and q_2 , and inversely proportional to r .
- b. Directly proportional to q_1 and q_2 , and inversely proportional to r^2 .
- c. Inversely proportional to q_1 and q_2 , and inversely proportional to r .
- d. Inversely proportional to q_1 and q_2 , and inversely proportional to r^2 . (1 Point)

None of these

Only b

Only d

Only c

Only a

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What assumption is typically made when analysing trusses using the method of joints?

- a) The truss members are rigid
- b) The truss is subjected to static equilibrium
- c) The truss is a continuous structure
- d) The truss experiences no bending moment  (1 Point)

a, b and c

Only b and c

b and d

Only a and c

Only c and d

Only d

In truss analysis, what is the primary purpose of using the method of joints?

- a) To determine the support reactions
- b) To calculate member forces by analyzing joints individually
- c) To analyze the overall stability of the truss
- d) To determine the deflection of the truss structure  (1 Point)

Only d

All of these

Only a

Cannot be said

Only b

Only c

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The principle of superposition of forces is a fundamental law of physics  (1 Point)

True

False

Which condition must be satisfied by a truss to remain stable under applied loads?

- a) It must have a minimum number of members
- b) It must have at least one redundant member
- c) It must be statically determinate
- d) It must satisfy the equilibrium equations at each joint  (1 Point)

Only a and c

Only b and d

Only a, c and d

Only c and d

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The principle of superposition of forces is used to calculate:

- a. The force on a charge in an electric field.
- b. The force on a charge in a magnetic field.
- c. The force between two charges.

(1 Point)

Either a or b

Only a

Only c

Only b

All of these

A robotic arm with 6 degrees of freedom can move in how many different directions?

- a) 6
- b) 12
- c) 36
- d) 72

(1 Point)

a

c

d

b

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A body is in equilibrium under the action of three forces. If the resultant of any two forces is 10 N, then the third force is  (1 Point)

- 10 N and opposite direction of resultant
- 10 N and same direction of resultant
- 0 N
- Cannot be determined

The degree of freedom of a system can be increased by:

- a) Adding a link to the system.
- b) Adding a joint to the system.
- c) Removing a link from the system.
- d) Removing a joint from the system.  (1 Point)

- only c
- a and b
- only d
- None of these
- Only a

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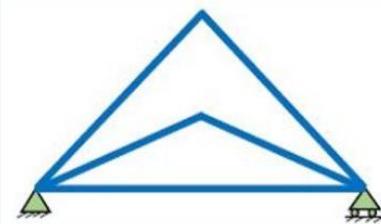
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Choose the appropriate combinations from the followings:

- a) Statically Indeterminate and stable
- b) Statically Determinate and stable
- c) Statically Determinate but externally unstable
- d) Statically Indeterminate but externally unstable

 (1 Point)

 a d b c

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CM

9

If $y' = x + y$, $y(0) = 1$ and $y_1 = 1 + x + x^2/2$, then, by Picard's method the value of y_2 is: *

$1 + x + x^2 + \frac{x^3}{3}$

$1 + x + x^2 + \frac{x^3}{6}$

$1 + 2x + x^2 + \frac{x^3}{3}$

$1 + x + 2x^2 + \frac{x^3}{3}$

4

The classical fourth-order Runge-Kutta method is most suited for solving: *

Partial differential equations.

Nonlinear algebraic equations.

First-order ordinary differential equations.

Second-order linear ODEs directly.

6

If $y' = -y$, $y(0) = 1$, then by Euler's method, the value of $y(0.1)$ is *

0.9

0.5

0.7

1

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7

What is the maximum number of edges in a simple graph with 6 vertices? *

- 6
- 12
- 15
- 30

10

Which of the following is true about the Modified Euler's Method? *

- It is another name for Runge-Kutta method
- It only works for linear differential equations.
- It is more accurate than the standard Euler's Method for the same step size.
- It does not depend on the step size for accuracy.

12

If G graph has 15 edges, 3 vertices of degree 2 and remaining vertices of degree 3, then the number of vertices of G is *

- 10
- 13
- 11
- 8

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13

How many edges does a graph have if its degree sequence is $<5, 2, 2, 2, 2, 1>$? *

6

14

7

12

14

The complete graph with 5 vertices has k edges where k is..... *

6

8

10

12

15

The maximum number of edges in a bipartite graph with 10 vertices is..... *

36

25

45

10

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16

Which of the following methods is the best for solving initial value problems: * 

- Picard's method
- Euler's method
- Runge-Kutta method of the fourth order
- Modified Euler's method.

21

With four vertices, what is the maximum number of possible simple graphs that can be generated? * 

- 64
- 32
- 6
- None of these

20

Which of the following degree sequences are graphic:

$$\begin{aligned}d_1 &= \langle 5, 1, 1, 1, 1, 1 \rangle \\d_2 &= \langle 4, 4, 3, 2, 1 \rangle \\d_3 &= \langle 3, 3, 3, 3, 2 \rangle\end{aligned}$$

* 

- d1 & d3 not d2
- d1 & d2 not d3
- d2 & d3 not d1
- all d1, d2 & d3

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23

Which of the following is true about Picard's method for solving ODEs? *

- It is an iterative method.
 - It requires an initial guess of the solution.
 - It generates successive approximations to the solution.
 - All of the above.
- Send me an email receipt of my responses

19

The coefficients of k_1 , k_2 , k_3 and k_4 , respectively, used in the fourth-order Runge-Kutta method for computing y_{n+1} are: *

- $\frac{1}{2}, \frac{1}{2}$
- 1, 2, 2, 1
- 1, 3, 3, 1
- $\frac{1}{6}, \frac{1}{3}, \frac{1}{3}, \frac{1}{6}$

17

If Picard's method is applied to $y' = x^2$, $y(0) = 0$, what is the second iteration $y_2(x)$? *

- $\frac{x^2}{2}$
- $\frac{x^3}{3}$
- $\frac{x^4}{4}$
- $\frac{x^4}{12}$

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11

Which of these adjacency matrices represents a simple graph? * 

- [[1, 1, 1], [0, 1, 1], [1, 0, 1]]
- [[1, 0, 0], [0, 1, 0], [0, 1, 1]]
- [[0, 1, 1], [1, 0, 1], [1, 1, 0]]
- [[0, 0, 1], [0, 0, 0], [0, 0, 1]]

Process of estimating the value of dependent variable at an intermediate value is called (1 Point) * 

- Extrapolation
- Interpolation
- Estimation
- Dependency

Let h be the finite difference, then forward difference operator is defined by (1 Point) * 

- $\Delta f(x) = f(x+h)-f(x)$
- $\Delta f(x) = f(x-h)-f(x)$
- $\Delta f(x) = f(x) * f(x-h)$
- None of the above

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Observe the following statements for moving towards the root of the equation $f(x) = 0$

Statement 1: Bisection method is slower than Newton Raphson method.

Statement 2: Newton Raphson method is slower than Regula Falsi method.

Which of the following option is most appropriate? (1 Point) *

(4)

- Statement 1 and 2 both are correct.
- Statement 1 is correct but Statement 2 is not correct.
- Statement 1 and 2 both are incorrect.
- Statement 1 is incorrect and statement 2 is correct.

Newton- Gregory Forward interpolation formula can be used (1 Point) *

(4)

- only for equally spaced intervals
- for unequally intervals
- for both equally and unequally spaced intervals
- for unequally intervals

The equation $\tan(x)-x = 0$ is (1 Point) *

(4)

- Linear
- Tangent
- Transcendental
- All of the above

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For the following equation, one of the roots lies between 2 and 3. Using the Regula Falsi method, the root lies in which of the intervals after the first approximation? (1 Point) * 

$$x^3 - 2x - 5 = 0$$

- (2.0813, 3)
- (2, 2.0943)
- (2.0588, 3)
- (2, 2.0588)

The relationship between E and Δ is (1 Point) * 

- $E = 1 - \Delta$
- $E = 1 + \Delta$
- $E = \Delta$
- $E = \Delta - 1$

In evaluation of a definite integral (given below), which of the following method may be used? (1 Point) * 

$$\int_a^b f(x) dx$$

- Trapezoidal rule
- Simpson's $\frac{1}{3}$ rule
- Simpson's $\frac{3}{8}$ rule
- All of these

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Find the following: (1 Point) *

$$\Delta e^{ax}$$

$e^{ax} (e^{ah} - 1)$

$e^{ax} (e^h - 1)$

$e^x (e^{ah} - 1)$

$e^{ax} (e^{ah} + 1)$

By using Newton's backward difference table form the following data:

$f(30) = 0.5000, f(35) = 0.5736, f(40) = 0.6428, f(45) = 0.7071$. What is the value of (1 Point) *

$$\nabla^3 y_n?$$

-0.0049

-1.872

-0.0005

-0.0469

One of the root for the following equation lies between 0 and 1. Using the Bisection method, after second approximation, the root lies in which of the interval? (1 Point) *

$$3x - \cos x - 1 = 0$$

(0.5, 1)

(0.5, 0.75)

(0.75, 1)

(0, 0.25)

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A smallest real root of the following equation lies between which of the following interval? (1 Point) * □₄₀

$$x \log_{10} x - 1.2 = 0$$

(2, 3)

(1, 2)

(-1, 0)

(-0.5, 0.5)

For an equation $f(x) = 0$, the Newton Raphson formula to calculate the $(n+1)$ th approximation of the root is (1 Point) * □₄₀

$x_{n+1} = x_n - \frac{f(x_n)}{f''(x_n)}$

$x_{n+1} = x_n + \frac{f(x_n)}{f''(x_n)}$

$x_{n+1} = x_n - \frac{f(x_n)}{f'(x_n)}$

$x_{n+1} = x_n + \frac{f(x_n)}{f'(x_n)}$

To find the solution of following equation, the $(n + 1)$ th approximation of the root by Newton Raphson method is (1 Point) * □₄₀

$$x = \sqrt[3]{7}$$

$x_{n+1} = \frac{2x_n^3 + 7}{3x_n^2}$

$x_{n+1} = \frac{x_n^3 + 7}{x_n^2}$

$x_{n+1} = \frac{3x_n^3 + 7}{2x_n^2}$

$x_{n+1} = \frac{2x_n^3 - 7}{3x_n^2}$

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EP

23

The ratio of power emitted by a black body at 27°C and 627°C is, * (1 Point)

- 1:3
- 1:9
- 1:27
- 1:81

4

Radio waves are readily diffracted around buildings whereas light waves are negligibly diffracted around buildings. This is because radio waves: * (1 Point)

- A. are plane polarized
- B. have much longer wavelengths than light waves
- C. have much shorter wavelengths than light waves
- D. are nearly monochromatic (single frequency)

5

When a laser beam of light is directed against a very fine wire, the shadow formed on the screen contains, * (1 Point)

- A. a single very sharp and narrow shadow of thin wire
- B. a single and dull shadow of thin wire
- C. the shadow of several parallel wires
- D. No shadow

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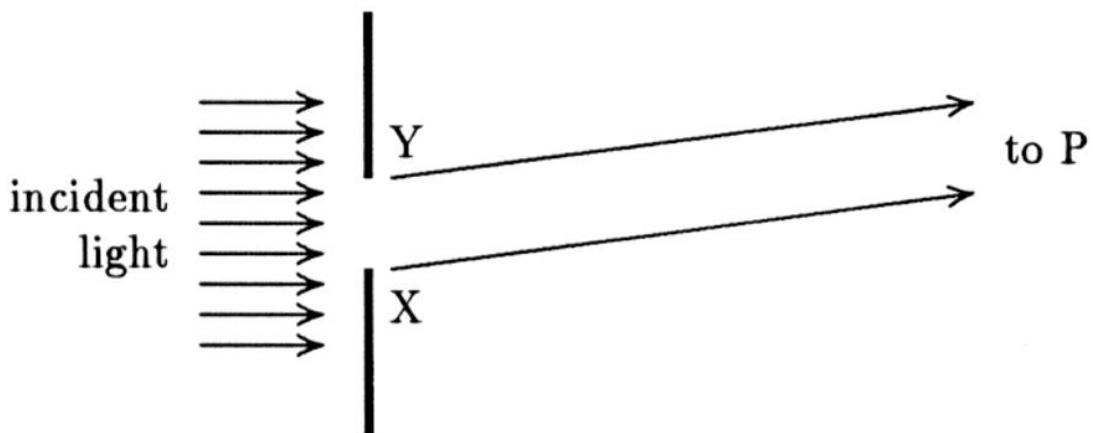
6

No fringe pattern will be observed in a single-slit diffraction, if. * (1 Point)

- A. the screen is far away
- B. the slit width is greater than a wavelength
- C. the slit width is less than a wavelength
- D. the wavelength is less than the distance to the screen

The diagram shows a single slit with the direction to a point P on a distant screen shown. At P, the pattern has its second minimum (from its central maximum). If X and Y are the edges of the slit, what is the path length difference $(PX) - (PY)$?

* (1 Point)



- A. $\lambda/2$
- B. λ
- C. $3\lambda/2$
- D. 2λ

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8

At the first minimum adjacent to the central maximum of a single-slit diffraction pattern the Huygens wavelet from the top of the slit is out of phase (180°) with the wavelet from: * (1 Point)

- A. a point one-fourth of the slit width from the top
- B. the midpoint of the slit
- C. a point one-fourth of the slit width from the bottom of the slit
- D. the bottom of the slit

9

A diffraction pattern is produced on a viewing screen by illuminating a long narrow slit with light of wavelength λ . If the slit width is decreased and no other changes are made: * (1 Point)

- A. the intensity at the center of the pattern decreases and the pattern expands away from the bright center
- B. the intensity at the center of the pattern increases and the pattern contracts toward the bright center
- C. the intensity at the center of the pattern does not change and the pattern expands away from the bright center
- D. the intensity at the center of the pattern does not change and the pattern contracts toward the bright center

11

The intensity at a secondary maximum of a single-slit diffraction pattern is less than the intensity at the central maximum chiefly because: * (1 Point)

- A. some Huygens wavelets sum to zero at the secondary maximum but not at the central maximum
- B. the secondary maximum is further from the slits than the central maximum and intensity decreases as the square of the distance
- C. the Huygens construction is not valid for a secondary maximum
- D. the amplitude of every Huygens wavelet is smaller when it travels to a secondary maximum than when it travels to the central maximum

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13

When 450-nm light is incident normally on a certain double-slit system the number of interference maxima within the central diffraction maximum is 5. When 900-nm light is incident on the same slit system the number is: *  (1 Point)

- A. 2
- B. 3
- C. 5
- D. 9

14

600-nm light is incident on a diffraction grating with a ruling separation of 1.7 micro-meter. The first order maximum occurs at a diffraction angle of: *  (1 Point)

- A. 0°
- B. 10°
- C. 21°
- D. 42°

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15

Monochromatic light is normally incident on a diffraction grating that is 1 cm wide and has 10,000 slits. The first order primary maximum is observed at a 30° angle. What is the wavelength, in nm, of the incident light? *  (1 Point)

- A. 300
- B. 400
- C. 500
- D. 600

21

A feature of the spectral radiance of a cavity that is NOT predicted by the Rayleigh-Jeans classical expression is: *  (1 Point)

- A. its shape at longer wavelengths
- B. its shape for shorter wavelengths
- C. the temperature dependence of the long wavelength limit
- D. the dependence of the long wavelength limit on the cavity size

PHY1001-Quiz-I

 ...

* Required

MCQ-Section



5. For a point source of light, kept at infinite distance from an observer, the nature of wavefront observed by the observer is- (1 Point) * 

- Cylindrical
- Spherical
- Planner
- None of these

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6. When white light is used as a source of light in the Young's double slit experiment (YDSE), the position of first minima, from central maxima, is least for _____ colour. (1 Point) *

- Red
- Green
- Yellow
- Purple

7. Two monochromatic, independent and identical sources _____ (1 Point) *

- can be coherent, as they are identical
- can't be coherent, as they couldn't maintain a constant phase difference between them

8. While performing YDSE using a monochromatic source, one of the conditions to obtain a clear fringe pattern on the screen is, (assume 'd' - distance between two slits and λ - wavelength of light used) (1 Point)
*

- $d < \lambda$
- $d > \lambda$
- $d = \lambda$
- None of these

9. For constructive interference the path difference is- (assume 'n' as an integer)

A) 2λ B) λ C) $2n\lambda/2$ D) $(2n + 1)\lambda/2$ (1 Point) *

- Only B
- A and B
- A, B and C
- A, B, C, and D

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10. If the air film between the plano-convex lens and glass plate is replaced by an oil, then the radius of Newton's ring will _____. (1 Point) *

Increase

Decrease

Not Change

11. When light suffers reflection between air and glass plate in Newton's rings experiment, the reflected wave suffers a phase change of _____. (1 Point) *

$\pi/2$

$\pi/4$

π

2π

12. The minimum thickness (d) required to obtain anti-reflective coating for a monochromatic light of wavelength ' λ ' is _____. (1 Point) *

$d = \lambda$

$d = \lambda/2$

$d = \lambda/3$

$d = \lambda/4$

13. A light wave with an electric field amplitude of $2E_0$ and a phase constant of zero is to be combined with one of the following coherent waves, which of these combinations produces the least intensity at the central point on the screen? (1 Point) *

wave A has an amplitude of E_0 and a phase constant of zero

wave B has an amplitude of $2E_0$ and a phase constant of π

wave C has an amplitude of $2E_0$ and a phase constant of zero

wave D has an amplitude of $3E_0$ and a phase constant of π

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14. In a Young's double-slit experiment, if one of the two slits is partially covered so that it transmits only half the intensity of the other slit, then: (1 Point) * 

- The fringe pattern will disappear
- The bright fringes get more brighter and the dark fringes get more darker
- The dark fringes get a bit brighter, and the bright ones get a bit dimmer
- All bright and dark fringes just get dimmer

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COI

Constitutionalism Means (1 Point) *

- Constitution is supreme
- Will of People is Supreme
- Constitution is not relevant
- Parliament is Supreme

**Secularism Means
(1 Point) ***

- State will have no religion
- Social Welfare
- State to follow one religion
- None of the Above

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Which of the following is not an essential element of State (1 Point) *

- Population
- Government
- Sovereignty
- Constitution

Fundamental Rights are Included under Which part of Indian Constitution (1 Point) *

- Part I
- Part III
- Part IV
- None of the Above

Which of the following is part of Constitutionalism (1 Point) *

- Supremacy of Constitution
- Rule of Law
- Independent Judiciary
- All of the Above

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Preamble does not provide provides for which kind of Justice (1 Point) *

- Social
- Economic
- Political
- Cultural

Procedure established by law includes (1 Point) *

- Due process of Law
- Rule of Law
- Natural Justice
- Democracy

Which organ makes the law
(1 Point) *

- Legislature
- Judiciary
- President
- Prime Minister

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Organs of the state to functiontion in the limits provided by
(1 Point) *

- Legislature
- President
- No Limit is provided
- Constitution

Basic Structure Doctrine is laid down by constitution in the case **(1 Point) ***

- Maneka Gandhi Case
- Kesavananda Bharti Case
- Golaknath Case
- Sajjan Singh Case

19. Polymeric units of **Nucleotides** are **(1 Point) ***

- Proteins
- Polysaccharides
- DNA
- Lipids

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When the Constitution of India Came into force (2 Points) *



- November 26, 1949
- November 26, 1947
- January 26, 1950
- January 26, 1947

Who was the chairman of Drafting Committee (2 Points) *



- Dr. Rajendra Prasad
- Mr M.N. Roy
- Dr B.R. Ambedkar
- Pt. Jawaharlal Nehru

Who presented the objective resolution to the constituent assembly? (2 Points) *



- Dr. Rajendra Prasad
- Mr M.N. Roy
- Dr B.R. Ambedkar
- Pt. Jawaharlal Nehru

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Fundamental Right are borrowed from (2 Points) * 

- U.S.A.
- United Kingdom
- Russia
- South Africa

By which amendment the preamble was amended (2 Points) * 

- 24th Constitutional Amendment
- 36th Constitutional Amendment
- 42nd Constitutional Amendment
- 44th Constitutional Amendment

Preamble provides for which kind of Justice (2 Points) * 

- Social
- Economic
- Political
- All of the above

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As per the preamble the ultimate power vests in (2 Points) * 

- Legilsature
- People of India
- Judiciary
- Executive

First time the demand for Constituent Assembly was put forwarded by (2 Points) * 

- Mr. M.N. Roy
- Dr. Rajendra Prasad
- Dr B.R. Ambedkar
- Durgabai Deshmukh

First Meeting of the Constituent Assembly was held on. (2 Points) * 

- December 6 1947
- December 9 1946
- December 6 1950
- December 6 1948

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Which theory States that Origin of state is the creation of god (2 Points) * 

Divine Theory

Patriarchal Theory

Matriarchal Theory

Force Theory

Which theory states that the state has origin from family ruled by male (2 Points) * 

Divine Theory

Patriarchal Theory

Matriarchal Theory

Force Theory

Which theory states that the origin of state is due to wars and foreign aggression (2 Points) * 

Divine Theory

Force Theory

Matriarchal Theory

Social Contract Theory

Which theory states that the origin of state is the origin due to agreement among people (2 Points) * 

Divine Theory

Force Theory

Matriarchal Theory

Social Contract Theory

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Which of the following is not an essential element of state (2 Points) * 

- Population
- Territory
- Government
- Constitution

Which of the following define the power of organs of state (2 Points) * 

- Parliament
- Judiciary
- Legislature
- Constitution

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UHV

3. The basic aspiration of a human being is continuity of _____and _____ (1 Point)



- happiness and physical facility
- physical facility and prosperity
- physical facility and relationship
- happiness and prosperity

4. The process of self-exploration helps to improving (1 Point)

- right understanding
- happiness
- relationship
- all the above

5. Namaskar and touching feet to the elders is the part of (1 Point)

- right understanding
- feeling of faith
- feeling of trust
- Sanskar's

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6. For fulfilment of human being _____ is necessary (1 Point) 

- Physical facility
- relationship
- right understanding
- all of the above

7. Most important condition needed to make us happy is (1 Point) 

- right understanding
- right utilization
- right guidance
- right direction

8. _____ is essential to facilitate holistic development (1 Point) 

- Money
- Physical facility
- Educational Sanskar's
- Relationship

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9. Educational sanskars are gain by the students from the (1 Point) 

- parents
- teachers
- relatives
- all the above

10. Right feeling with oneself is (1 Point) 

- definite
- continuous
- unconditional
- all of the above

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11. What is the most basic human aspiration. (1 Point) 

- happiness
- health
- money
- prosperity

12. The human goal at the level of individual is (1 Point) 

- prosperity
- fearlessness
- coexistence
- right understanding

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Understanding and living in harmony at all 4 levels of beings is called _____.
(1 Point) * 

- Competition
- Excellence
- Reverence
- Gratitude

_____ means harmony within myself.

(1 Point) * 

- Happiness
- Pleasure
- Excitement
- All

1. Identify the solution which helps human being to transform from animal consciousness to human consciousness

(1 Point) * 

- a) Right Understanding
- b) Realization
- c) Value Education
- d) Physical Facilities

Developed nations are the live example of

(1 Point) * 

- Prosperity
- Wealth
- Happiness
- Health

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For continuity of happiness, what is essential?

(1 Point) *

- Right understanding in the Self
- Right feeling and right thought in the Self
- Recognition of needs, ensure more than required, make right utilisation of it
- All the above

Terms- definite, continuous, unconditional refers to _____.

(1 Point) *

- Right understanding
- Right feeling
- Swatantrata
- All

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The feeling of Responsibility to ensure health of body of others is related with
(1 Point) * 

- Care
- Self Regulation
- Guidance
- Affection

PARTANTRATA deals with

(1 Point) * 

- Within you don't have any definite feeling (it keeps fluctuating)
- If the other expresses right feeling, you feel "happy"
- If the other expresses wrong feeling, you feel "unhappy"
- All

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What is the third level of living

(1 Point) *



a) Society

b) Individual

c) Family

d) Nature

When we expect feelings from others for our happiness, it is a state of (1 Point)



a) Swatantrata

b) Partantrata

c) Prosperity

d) None

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Right Feeling and Right thought deals with
(1 Point) *

- Self
- Self and Body both
- Body
- Physical Facilities

What is the state of liking and a holistic and all-encompassing state of the mind that
harmony? (1 Point) *

- a) Prosperity
- b) Happiness
- c) Innateness
- d) Self-organized

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What is called living with assumption for oneself as body and living of human being only physical, and not with right understanding and relationship?

(1 Point) * 4)

- a) Human Consciousness
- b) Happiness
- c) Right Understanding
- d) Animal Consciousness

The human goal at the level of individual is
(1 Point) * 4)

- Prosperity
- Fearlessness
- Co-existence
- Right understanding

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When we participate in the larger order, this participation at different levels is known as our values.
Values are outcome of

(1 Point) *

- a) Prosperity
- b) Happiness
- c) Realization and Understanding
- d) Self Exploration

Right feeling within myself (I) is

(1 Point) *

- Definite
- Continuous
- Unconditional
- All

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For behavior in relationship to be right, it is necessary for the _____ and ___ to be right
(1 Point) *

- Feeling and thought
- Physical facility and health
- Wealth and prosperity
- None

Self and _____ are different in nature, materiality, needs and activities.

(1 Point) *

- Prosperity
- Right Understanding
- Body
- None of the above

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Behavior depends upon _____.

(1 Point) *

- Feelings
- Desire, Thought, Expectation
- Right Understanding
- All

LOVE and COMPASSION deal with

(1 Point) *

- Right understanding in the self
- Fulfilment in relationship
- Ensuring more than required physical facility
- None

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EVS

4. The ozone layer lies in ----- (0.5 Points) *

- Exosphere
- Stratosphere
- Troposphere
- Mesosphere

5. The most common form of phosphorous found in nature is ----- which is found in ----- (0.5 Points) *

- Triose phosphates, Water
- Phosphates, Rocks
- None of these
- Phosphates, Atmosphere

6. Who coined the word 'ecology'? (0.5 Points) *

- Charles Darwin
- Ernst Haeckel
- Gregory Mendel
- Saun Marine

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7. Which one of the following statements for pyramid of energy is incorrect? (0.5 Points) * 

- It is upright in shape
- It shows energy content of different trophic level organisms
- It is inverted in shape
- Its base is broad

8. Plants use CO₂ in the process of ----- to make sugar with the release of ----- (0.5 Points) * 

- Photosynthesis, O₂
- Photosynthesis, H₂O
- Respiration, CO₂
- Respiration, O₂

9. The final stable community in an ecological succession is known as ----- (0.5 Points)
* 

- Climax
- Intermediate
- Pioneer
- Serel

10. Pichola lake is an example of ----- ecosystem. (0.5 Points) * 

- Lotic
- Estuary
- Marine
- Lentic

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11. Where does Xerosere succession takes place? (0.5 Points) * 

- Saline land
- Soil
- Water
- Desert

12. Grassland in an island is an example of ----- ecosystem. (0.5 Points) * 

- Saline
- Aquatic
- Marine
- Terrestrial

13. Which among the following are telluric or terrestrial planets? (0.5 Points) * 

- Earth, Saturn, Uranus and Neptune
- Mercury, Venus, Earth, and Mars
- Jupiter, Saturn, Uranus and Neptune
- Mercury, Earth, Neptune and Mars

14. The gaseous sphere which envelopes the Earth is known as -----
(0.5 Points) * 

- Exosphere
- Mesosphere
- Atmosphere
- Stratosphere

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15. The International Day of Forests is celebrated on _____ every year to highlight the importance and significance of forests and raise awareness about forest restoration. (0.5 Points) * 

- April 21
- June 21
- May 21
- March 21

16. The mantle consists mainly of _____ (0.5 Points) * 

- Granitic rocks
- Silicate rocks
- Basaltic rocks
- Gabbroic rocks

17. ----- is the coldest layer in the atmosphere. (0.5 Points) * 

- Stratosphere
- Mesosphere
- Thermosphere
- Troposphere

18. Which of the following gives value to all living things, both human and nonhuman? (0.5 Points) * 

- Ecocentrism
- Biocentrism
- Environmentalism
- Anthropocentrism

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19. What element makes up most of the Earth's core? (0.5 Points) *

Nickle

Oxygen

Iron

Silicon

20. The main disadvantage of food chain is ----- (0.5 Points) *

Biodiversity

Nutrients passage

Energy flow

Biomagnification

21. Oceanic crust is composed of ----- rocks. (0.5 Points) *

Basalt

Sandstone

Granite

Marble

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22. The total set of carbon emissions caused by an individual is _____ (0.5 Points) *

- Carbon footprint
- Carbon cycle
- Ecological footprint
- Carbon summary

23. The intermediate changes which happen in any succession is known as ----- (0.5 Points) *

- Climax stage
- Pioneer stage
- Serel stage
- None of these

23. All are in-situ conservation efforts except ----- (0.5 Points) *

- Biosphere reserves
- Sanctuaries
- Reserve Forest
- Zoo

4. Sacred groves are especially useful in ----- (0.5 Points) *

- Conserving rare and threatened species
- Generating environmental awareness
- Increasing water table
- Preventing soil erosion

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5. Top-soil erosion leads to ----- (0.5 Points) * 

- Increase of Oxygen
- Decrease of Oxygen
- Depletion of nutrients
- Increase of nutrients

6. Which among the following has a low species diversity? (0.5 Points) * 

- Isolated Islands
- The Western Ghats
- The Himalayas
- Tropical Rain Forest

7. Biogas is a mixture of ----- and ----- (0.5 Points) * 

- Methane, Carbon monoxide
- Methane, Ethane
- Methane, Carbon dioxide
- Methane, Propane

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8. Which decade has been designated as the United Nations Decade on Ecosystem Restoration? (0.5 Points) *

- 2011-2020
- 2021-2030
- 1991-2000
- 2001-2010

9. The major energy source for the environment is ----- (0.5 Points) *

- Chemical energy
- Solar energy
- Physical energy
- Electrical energy

10. Geothermal energy is the thermal energy present ----- (0.5 Points) *

- On the surface of the earth
- On the surface of the ocean
- In the interior of the earth
- None of these

11. Resources which exist in a region and may be used in the future is known as ----- (0.5 Points)

- *
- Actual Resources
- Potential Resources
- None of these
- Exhausted Resources

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12. Approximately 65% of total world species are present in ----- (0.5 Points) * 

- Tropical rain forest
- Tundra region
- Temperate rain forest
- Temperate deciduous forest

13. Soil erosion can be prevented by ----- (0.5 Points) * 

- Deforestation
- Removal of vegetation
- Overgrazing
- Afforestation

14. How many bio-geographical zones are present in India? (0.5 Points) * 

- 6
- 4
- 7
- 10

15. Which of the following is/are responsible for desertification? (0.5 Points) * 

- Mining
- Overgrazing
- All of these
- Deforestation

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16. Every year which day is celebrated as "World Biodiversity Day"? (0.5 Points) * 

- 22-June
- 12-June
- 12-May
- 22-May

17. Irreversible and complete disappearance of a species is called ----- (0.5 Points) *



- None of these
- Ecological extinction
- Local extinction
- Biological extinction

18. How many megadiverse countries are there in the World? (0.5 Points) * 

- 15
- 16
- 17
- 18

9. The hotspots of biodiversity are characterized by ----- - (0.5 Points) * 

- high endemicity and low threat of extinction
- high endemicity and high threat of extinction
-

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19. The hotspots of biodiversity are characterized by -----
- (0.5 Points) *

- high endemity and low threat of extinction
- high endemity and high threat of extinction
- low endemity and low threat of extinction
- low endemity and high threat of extinction

20. Which among the following is/are used to prevent the loss of soil? (0.5 Points) *

- Mulching
- Organic farming
- Crop rotation
- All of these

21. Conservation within the natural habitat is ----- (0.5 Points) *

- In-situ conservation
- In-vivo conservation
- Ex-vivo conservation
- Ex-situ conservation

22. What are the three R's that are used to save the environment which includes forest? (0.5 Points) *

- Reduce, Reserve, Recycle
- Reduce, Reuse, Reserve
- Reduce, Reuse, Recycle
- Reserve, Reuse, Recycle

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23. Which of the following ultraviolet rays is more dangerous? (0.5 Points) * 

- None of these
- UV-A
- UV-B
- UV-C

4. Permanent hardness of water is caused due to presence of dissolved ----- (0.5 Points) * 

- (a) Sulphates / chlorides of magnesium
- (b) Sulphates / chlorides of calcium
- Both (a) & (b)
- None of these

5. Identify the False statement about the Greenhouse Effect? (0.5 Points) * 

- Life on earth is possible due to the greenhouse effect.
- Increased emission of greenhouse gases is a natural process.
- More is the emission of greenhouse gases, more is the temperature of the earth's atmosphere.
- Greenhouse effect is a natural process that maintains the earth's temperature.

6. The process of the concentration of a contaminant increasing as you move up the trophic level is known as -
----- (0.5 Points) * 

- Bio magnification
- Infusion
- Bioaccumulation
- Diffusion

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7. Fertilizer from agricultural lands can cause ----- (0.5 Points) *

- None of these
- Eutrophication
- Desalination
- Stagnation

8. Hardness of water is due to the presence of salts of ----- (0.5 Points) *

- Boron
- Magnesium
- Chlorine
- Zinc

9. In our Earth's atmosphere, where can you find the Good Ozone? (0.5 Points) *

- Mesosphere
- Troposphere
- Ionosphere
- Stratosphere

10. The main contributors of acid rain are ----- and ----- (0.5 Points) *

- sulphur oxides and carbon oxides
- nitrogen oxides and sulphur oxides
- nitrogen oxides and carbon oxides
- carbon dioxide and carbon monoxide

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11. Which of the following pollutants is the major constituent in photochemical smog? (0.5 Points) * 

- Ozone
- Hydroperoxides
- Sulphur dioxide
- Peroxy Chloride

12. Which ion exchanger is necessary to remove the hardness from water? (0.5 Points) * 

- Cation exchanger
- Both Anion & Cation exchanger
- Anion exchanger
- None of these

13. Noise level is measured in ----- units. (0.5 Points) * 

- None of these
- Decibel
- PPM
- Hertz

14. Which type of land/soil pollution cause makes soil unfit for cultivation due to high salt content? (0.5 Points)

* 

- Oxygenation
- Salinization
- Carbonisation
- Desertification

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15. CFCs have not been designated for use in refrigerators since they ----- (0.5 Points) * 

- Harm the human body.
- Raise the temperature.
- Harm the ecosystem.
- Degrade ozone layer.

16. The quantity of DDT at each trophic level in the Food Chain ----- (0.5 Points) * 

- Decreases
- Remains the same
- All of these
- Increases

17. Rapid sand filtration is a ----- process. (0.5 Points) * 

- Electrochemical
- Chemical
- Physical
- Biological

18. Which of the following statement regarding SMOG is true? (0.5 Points) * 

- SMOG originates from water vapor.
- SMOG originates from fog.
- SMOG originates through the combination of fog and smoke.
- SMOG is formed from smoke.

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19. Which of the following device / method is suitable for the removal of gaseous air pollutants? (0.5 Points) *



- Combustion
- Fabric filter
- Electrostatic precipitator
- Cyclone separator

20. At what level a sound becomes physical pain? (0.5 Points) *

- Above 70 dB
- Above 100 dB
- Above 80 dB
- Above 50 dB

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21. Which nutrient is primarily responsible for eutrophication?

(0.5 Points) *

- Oxygen
- Phosphorus
- Nitrogen
- Carbon

22. Which Greenhouse gas is present in very high concentrations? (0.5 Points) *

- Ethane
- Methane
- Carbon dioxide
- Propane