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| Name: |  |  |  |  |  |
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| Subject: | Mathematics-12 | Roll\#: |  | Class: | Inter Part-II |
| Test Type \# | Type 15 - Full Test - Board Paper Pattern - Marks=100 |  |  |  |  |
| Test Syllabus: | Unit-1, Unit-2, Unit-3, Unit-7, |  |  |  |  |

1- Circle the correct one.
$(20 \times 1=20)$

1. The perimeter $P$ of a square as a function of its area $A$ is:
(A) $\mathrm{P}=\sqrt{ } \mathrm{A}$
(B) $\mathrm{P}=4 \sqrt{ } \mathrm{~A}$
(C) $\mathrm{P}=4 \mathrm{~A}$
(D) $P=\frac{1}{4} \sqrt{ } A$
2. Projection of $\underline{a}=\underline{i}-\underline{k}$ along $\underline{b}=\underline{j}+\underline{k}$ is:
(A) $-\frac{1}{\sqrt{ } 2}$
(B) $\frac{1}{\sqrt{2}}$
(C) $\frac{3}{\sqrt{2}}$
(D) $\frac{1}{2}$
3. If the degree of a polynomial function is $\qquad$ , then it is called a linear function.
(A) 0
(B) 1
(C) 2
(D) 3
4. Let $f(x)=\frac{x}{x-2}$ then domain of $;$ is the set of all real numbers except:
(A) 0
(B) 1
(C) 2
(D) 3
5. Parametric equations: $\boldsymbol{x}=\mathbf{a} \boldsymbol{\operatorname { c o s }} \mathbf{q}, \boldsymbol{y}=\mathbf{b} \boldsymbol{\operatorname { s i n }} \mathrm{q}$ represent the equation of:
(A) parabola
(B) hyperbola
(C) ellipse
(D) circle
6. $x=a \sec \theta$ and $y=b \tan \theta$ are parametric equation of:
(A) Parabola
(B) Hyperbola
(C) Circle
(D) Ellipse
7. $\left.\lim _{x \rightarrow d} \frac{f(x)}{g(x)}\right)=\ldots \ldots, \lim _{x \rightarrow g(x)} \neq 0$
(A) $\frac{f(x)}{g(x)}$
(B) $\frac{\lim _{x} \quad g(x)}{\lim _{x} f(x)}$
(C) $\frac{\lim _{x \rightarrow f} f(x)}{\lim _{x \rightarrow f}(x)}$
(D) None of these
8. If $f(x)=x^{10}$, then $f^{\prime}(1)$ :
(A) 9
(B) 9
(C) 10
(D) 100
9. $\frac{d}{d x}\{\mathrm{c} . \mathrm{f}(\mathrm{x})\}=$ ?
(A) c
(B) $\frac{d}{d x} f(x)$
(C) $\mathrm{c}\left\{\frac{\mathrm{a}}{\mathrm{dx}} \mathrm{f}(\mathrm{x})\right\}$
(D) $f(x)$
10. $\frac{d}{d x}\left(x-\frac{\cos 2}{2}\right)^{x}$ is equal to:
(A) $\sin x+\cos x$
(B) $(\sin x+\cos x)^{2}$
(C) $\sin x-\cos x$
(D) $(\sin x-\cos x)^{2}$
11. $\frac{d}{d x} \cot ^{2} 2 x=$ $\qquad$ :
(A) $4 \cot 2 x \operatorname{cosec} 2 x$
(B) $-4 \cot 2 x \operatorname{cosec} 22 x$
(C) $4 \cot 22 x \operatorname{cosec} 2 x$
(D) $-4 \cot 2 x$
12. $\frac{d}{d x}\left(\cos ^{-1} 3 x\right)=$ :
(A) $\frac{3}{\sqrt{1-9 \times 2}}$
(B) $\frac{-3}{\sqrt{1-9 \times 2}}$
(C) $\frac{1}{\sqrt{4-9 \times 2}}$
(D) $\frac{-1}{\sqrt{4-9 x 2}}$
13. $\frac{d}{d x}\left(e^{\sin x}\right)$ equals:
(A) $e^{\sin x} x \cos x$
(B) $-e \sin x \cos x$
(C) $e^{\cos \sin x}$
(D) $-e \cos ^{\sin } x$
14. If $y=e^{2 x}$, then $y 2$ is equal to:
(A) $e^{2 x}$
(B) $4 e^{2 x}$
(C) $2 e^{2 x}$
(D) $8 e^{2 x}$
15. Maclaurin's Expansion of $\ln (1+x)$ is:
(A) $x-\frac{x 3}{3!}+\frac{x 5}{5!}+\ldots$
(B) $1-\frac{x^{2}}{2!}+\frac{x 4}{4!}+\ldots$
(C) $-x-\frac{x^{2}}{2!}+\frac{x^{3}}{3!}+\ldots$
(D) $-x-\frac{x^{2}}{2}-\frac{x^{3}}{3}+\ldots$
16. Let $f$ be differentiable in neighborhood of $c$, where $f(c)=0$. If
$f \boldsymbol{f}(\mathrm{x})$ changes sign from positive to negative as x increases through c , then $\mathrm{f}(\mathrm{c})$ is the $\qquad$
(A) increasing
(B) decreasing
(C) relative maxima
(D) relative minima
17. Differential of $x^{2}$ is:
(A) $2 x$
(B) $2 x d x$
(C) $2 x \frac{d y}{d x}$
(D) $2 x \frac{d x}{d y}$
18. $\int \frac{d}{d x}\left(x^{n}\right) d x=$
(A) $\frac{x n+1}{n}+c$
(B) $\frac{x n-1}{n-1}+c$
(C) $n x^{n+1}+c$
(D) $x^{n+c}$
19. $\int \frac{1}{\mathrm{ax}-\mathrm{d}} \mathrm{dx}=$ $\qquad$ :
(A) $\ln (a x-1)+c$
(B) $a \ln (a x-1)+c$
(C) $\frac{1}{a} \ln (a x-1)+c$
(D) $\frac{-1}{(a x-1)^{2}}$
20. Useful substitution of $\int \sqrt{a^{2}-x^{2}} d x$ is:
(A) $x=a \sin \theta$
(B) $x=a \sec \theta$
(C) $x=a \tan \theta$
(D) $x=\sin \theta$

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| Test Type \#: | Type 15 - Full Test - Board Paper Pattern - Marks=100 |  |  |  |  |
| Test Syllabus: | Unit-1, Unit-2, Unit-3, Unit-7, |  |  |  |  |

## (SECTION-I)

2- Write short answers to any EIGHT (8) of the following questions.
(8x2=16)
i. Evaluate each limit by using algebraic techniques: $\operatorname{Lim}_{h \rightarrow 0} \frac{\sqrt{\overline{x+h}} \mathrm{~h}}{}$
ii. Find $\frac{d y}{d x}$ if $y^{3}-2 x y^{2}+x^{2} y+3 x=0$
iii. Expand $\mathrm{a}^{\mathrm{x}}$ in the Maclaurin.
iv. Expand Maclaurin's series and prove: $e^{x}=1+x+\frac{x^{2}}{2!}+\frac{x^{3}}{3!}+\ldots$
v. Find the lengths of sides of a variable rectangle having area $36 \mathrm{~cm}^{2}$ when its perimeter is minimum.
vi. Use differential to approximate the value of (31) $\frac{1}{5}$.
vii. Evaluate $\int \frac{3 x+2}{\sqrt{x}} d x$
viii. Define position vector.
ix. Define triangle law of addition.
x . Find the magnitude of the vector $\underline{u}: \underline{u}=[3,-4]$
$x i$. Find a unit vector in the direction of $\underline{v}=\underline{i}+2 \underline{j}-\underline{k}$
xii. A force $\underline{F}=4 \underline{i}-3 \underline{k} \quad$ passes through the point $A(2,-2,5)$. Find moment of $\underline{F}$ about the point $B(1,-3,1)$.

3- Write short answers to any EIGHT (8) of the following questions.
i. If $f(x)=\sqrt{\bar{x}+1} \quad ; g(x)=\frac{1}{x^{2}} \quad$, find $f \circ g(x)$ :
ii. Evaluate $\lim x \rightarrow 0 \frac{\operatorname{Sec} x-\cos x}{x}$.
iii. Find by definition the derivative of $2-\sqrt{ } \bar{x}$
iv. Find $\frac{d y}{d x}$, if $y^{2}+x^{2}-4 x=5$
v. Evaluate $\int \frac{1-x^{2}}{1+x} d x$
vi. Evaluate $\int \frac{x}{\sqrt{4+x}} d x$
vii. If $\overrightarrow{A B}=\overrightarrow{C D}$, find the coordinates of the point $A$ when $B(1,2), C(-2,5)$ and $D(4,11)$ are given.
viii. Define negative vector.
ix. Define parallel vectors.

State right hand rule.
Define scalar product of two vectors.
Define work done by a force.
4- Write short answers to any EIGHT (8) of the following questions.
i. Given that $f(x)=\sqrt{ } \bar{x}+\overline{4} \quad$ then find $f(x-1)$
ii. Let $f(x)=\frac{x}{x^{2}-4} \quad$, Find the domain and range of $f$.
iii. Given that $f(x)=\sqrt{x+} \overline{4} \quad$ find $f(-2)$
iv. The real valued functions $f$ and $g$ are defined as $g \circ f(x)$. Find $f(x)=\frac{1}{\sqrt{x}=1}, x \neq 1 \quad g(x)=\left(x^{2}+1\right)^{2}$
v. Define dependent variable.
vi. Find the derivative of $x^{3}+2 x+3$
vii. Find $\frac{d y}{d x}$ of the following parametric functions: $x=\frac{a\left(1+t^{2}\right)}{1+t^{2}}, y=\frac{2 b t}{1+t^{2}}$
viii. Prove that: $\frac{d}{d x}\left(\cos ^{-1} x\right)=-\frac{1}{\sqrt{1-x}}$
ix. Differentiate w.r.t the variable involved $\tan ^{3} \theta \sec ^{2} \theta$
x . Define integration.
Find the unit vector in the direction of vector $\underline{v}=[3,-4]$
xi.
xii. Write the vector $\overrightarrow{P Q}$ in the form $x \underline{i}+y \underline{j} \quad: P(2,3), Q(6,-2)$
xiii. Find the constant $\propto$ such that vectors $\underline{i}-\underline{j}+\underline{k} \quad, \underline{i}-2 \underline{j}-3 \underline{k} \quad$ and $3 \underline{i}-\alpha \underline{j}+5 \underline{k} \quad$ are co-planer.

## (SECTION-II)

Attempt any THREE (3) questions.
5.(a) If $y=\sqrt{\tan x+\sqrt{\tan } \sqrt{\tan x}}+\ldots+\infty \quad$ prove that $(2 y-1) \frac{d y}{d x}=\sec ^{2} x$
(b) Use differentials to approximate the values of (31) $\frac{1}{5}$.
6.(a) Find $\frac{d y}{d x}$ if $y=\frac{\sqrt{x^{2}}-1(x+1)}{\left(x^{3}+1\right)^{\frac{3}{2}}}$
(b) Differentiate w.r.t ' $x^{\prime} \sec ^{-1}\left(\frac{x^{2}+1}{x^{2}-1}\right)$
7.(a) Evaluate $\lim _{\theta \rightarrow 0} \frac{\tan \theta-\sin \theta}{\sin ^{3} \theta}$.
(b) Evaluate $\int \frac{d x}{\left(1+x^{2} 4^{\frac{3}{2}}\right.}$
8.(a) Find $\frac{d y}{d x}$ from first principles if $\frac{1}{\sqrt{X+a}}$
(b) Show that the parametric equations $x=a \cos \theta, y=b \sin \theta \quad$ represents the equation of ellipse $\frac{x^{2}}{a}+\frac{x^{2}}{b^{2}}=1$
9.(a) The position vectors of the points $A, B, C$ and $D$ are $2 \underline{i}+\underline{j}-2 \underline{k} \quad, 3 \underline{i}+\underline{j}, 2 \underline{i}+4 \underline{j}-2 \underline{k}$ and $-\underline{i}-2 \underline{j}+\underline{k} \quad$ respectively show that $A B$ is parallel to $C D$.
(b) If $\overrightarrow{A B}=\overrightarrow{C D}$, find the coordinates of $A$ when points $B(1,2), C(-2,5), D(4,11)$.

## MCQs Ans Key.

| $\mathrm{Q}: 1(\mathrm{C})$ | $\mathrm{Q}: 2(\mathrm{~A})$ | $\mathrm{Q}: 3(\mathrm{~B})$ | $\mathrm{Q}: 4(\mathrm{C})$ | $\mathrm{Q}: 5(\mathrm{C})$ | $\mathrm{Q}: 6(\mathrm{~B})$ |
| :--- | :--- | :--- | :--- | :--- | :--- |
| $\mathrm{Q}: 7(\mathrm{C})$ | $\mathrm{Q}: 8(\mathrm{C})$ | $\mathrm{Q}: 9(\mathrm{C})$ | $\mathrm{Q}: 10(\mathrm{~B})$ | $\mathrm{Q}: 11(\mathrm{~B})$ | $\mathrm{Q}: 12(\mathrm{~B})$ |
| $\mathrm{Q}: 13(\mathrm{~A})$ | $\mathrm{Q}: 14(\mathrm{~B})$ | $\mathrm{Q}: 15(\mathrm{D})$ | $\mathrm{Q}: 16(\mathrm{C})$ | $\mathrm{Q}: 17(\mathrm{~B})$ | $\mathrm{Q}: 18$ (D) |
| $\mathrm{Q}: 19(\mathrm{C})$ | $\mathrm{Q}: 20(\mathrm{~A})$ |  |  |  |  |

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| Subject: | Mathematics-12 | Date: |  | Class: | Inter Part-II |
| Test Type \# | Type 15 - Full Test - Board Paper Pattern - Marks=100 |  |  |  |  |
| Test Syllabus: | Unit-3, Unit-4, Unit-5, Unit-6, |  |  |  |  |

1- Circle the correct one.
$(20 \times 1=20)$

1. If $\int_{1}^{5_{f}}(x) d x=5$, then $\int_{5}^{1} f(x) d x=$ ?
(A) -2
(B) -3
(C) -4
(D) -5
2. Equation of line through $(1,3)$ having slope 2 is:
(A) $x-1=2(y-3)$
(B) $y-3=2(x-1)$
(C) $y-1=2(x-3)$
(D) $x-1=2(y-3)$
3. The distance of the line $3 x+4 y+10=0$ from origin is:
(A) 0
(B) 1
(C) 2
(D) 10
4. If $a_{1} x+b_{1} y+c_{1}=0, a_{2} x+b_{2} y+c=0$
and $a 3 x+b_{3} y+c 3=0$
is singular, then lines are:
(A) collinear
(B) coplanar
(C) concurrent
(D) None of these
5. Equation of a vertical line through point $(3,-5)$ is:
(A) $x=-3$
(B) $y=5$
(C) $y=-5$
(D) $x=3$
6. The perpendicular distance of the line $3 x+4 y+5=0$ from the origin is:
(A) 0
(B) 1
(C) 2
(D) 5
7. If $\mathbf{q}$ is measure of the angle between the pair of lines of homogeneous second degree equation $a x^{2}+2 h x y+b y^{2}=0 \quad$ is equal to:
(A) $\tan \theta=\frac{2 \sqrt{ } \sqrt{24-a b}}{a-b}$
(B) $\tan \theta=\frac{2 \sqrt{n K}-a b}{a+b}$
(C) $\tan \theta=\frac{2 \sqrt{ } \sqrt{2}-a b}{a-b}$
(D) $\tan \theta=\frac{2 \sqrt{ } n^{2}+a b}{a+b}$
8. The inequality $2 x+3 y<5$ is:
(A) $(1,1)$
(B) $(-2,1)$
(C) $(1,2)$
(D) $(-2,3)$
9. $x=-5$ is in the solution of:
(A) $x+4>0$
(B) $2 x+3<0$
(C) $x+4 \geq 0$
(D) $x>0$
10. Non-vertical lines divide the plane into ------------ half plane.
(A) upper and lower
(B) many
(C) left and right
(D) None of these
11. The region of the graph $\mathbf{a x}+$ by $^{3} \mathbf{c}$ is called -------- half plane.
(A) open
(B) open as well as closed
(C) closed
(D) None of these
12. The ordered pair ------ is a solution of the inequality $x+2 y<6$.
(A) $(3,3)$
(B) $(1,1)$
(C) $(4,4)$
(D) None of these
13. The centre of circle $x+y+2 g x+2 f y+c=0$ is:
(A) $(-\mathrm{g},-\mathrm{f})$
(B) $(-\mathrm{f},-\mathrm{g})$
(C) $(0,0)$
(D) None of these
14. A point circle has:
(A) any point on it
(B) $(0,0)$
(C) centre only
(D) None of these
15. The general equation of second degree $A x^{2}+B y^{2}+G x+F y+c=0$ is alan -------------- if $A=B^{1} 0$.
(A) circle
(B) parabola
(C) hyperbola
(D) ellipse
16. The length of diameter of the circle $x^{2}+y^{2}-4 x-12=0$ is:
(A) 6
(B) 7
(C) 8
(D) 9
17. If the focus lies on the $y$-axis with coordinates $F(0,-a)$ and directrix of the parabola is $y=a$, then the equation of the parabola is:
(A) $x^{2}=4 a y$
(B) $y^{2}=4 a x$
(C) $x^{2}=-4 a y$
(D) $y^{2}=-4 a x$
18. The eccentricity of $\frac{y^{2}}{4}-x^{2}=1$ equals:
(A) $\frac{L}{V}$
(B) $\frac{-2}{\sqrt{5}}$
(C) $\frac{\sqrt{ } 5}{2}$
(D) $\frac{-\sqrt{ } 5}{2}$
19. The lines $\qquad$ are called asymptotes of the hyperbola $\frac{y^{2}}{a^{2}}-\frac{x^{2}}{b^{2}}=1$
(A) $x= \pm \frac{b}{a} y$
(B) $y= \pm \frac{a}{b} x$
(C) $x= \pm \frac{a}{b} y$
(D) $y= \pm \frac{b}{a} x$
20. The axes are rotated about the origin through an angle $\theta$ of $a x^{2}+b y^{2}+2 h x y+2 g x+2 f y+c=0$ given by $\qquad$ where $0<\theta<90^{\circ}$
(A) $\tan 2 \theta=\frac{2 f}{a-b}$
(B) $\tan 2 \theta=\frac{2 g}{a-b}$
(C) $\tan 2 \theta=\frac{2 \mathrm{~h}}{\mathrm{a}-\mathrm{b}}$
(D) None of these

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| Subject: | Mathematics-12 | Date: |  | Time: |  |
| Test Type \#: | Type 15 - Full Test - Board Paper Pattern - Marks=100 |  |  |  |  |
| Test Syllabus: | Unit-3, Unit-4, Unit-5, Unit-6, |  |  |  |  |

## (SECTION-I)

2- Write short answers to any EIGHT (8) of the following questions.
i. Define definite integral Give one example.
ii. Solve $\sec ^{2} x \tan y d x+\sec ^{2} y \tan x d y=0$
iii. Find the distance between the points $A(-8,3), B(2,-1)$.
iv. Transform the equation $5 x-12 y+39=0 \quad$ into normal form.

Graph the solution set of linear inequalities $x y-$ plane $x+y \geq 5 \quad ;-y+x \leq 1$
vi. Graph the solution region of linear inequalities. $x+y \leq 5 \quad, y-2 x \leq 2$
vii. Define circle drive its standard equation.
viii. Find equation of tangents to the circle $x^{2}+y^{2}=2$ perpendicular to the line $3 x+2 y=6$
$i x$. Find Focus and vertex of Parabola $x^{2}=4(y-1)$
x. Define vertex of Parabola.
xi. Define transverse axis of hyperbola.
xii. Find equations of the tangent to $\frac{x^{2}}{a^{2}}+\frac{y^{2}}{b^{2}}=1$

3- Write short answers to any EIGHT (8) of the following questions.
i. Evaluate $\int \frac{3-x}{1-x-6 x} d x$
ii. Evaluate $\int_{-2}^{2}\left(4-x^{2}\right) d x$
iii. Solve the differential equation $\frac{1}{x} \frac{d y}{d x}=\frac{1}{2}\left(1+y^{2}\right)$
iv. Find the coordinates of the point that divides join of $A(-6,3)$ and $B(5,-2)$ in ratio $2: 3$ externally.
v. Find the xy-coordinates of $P$ with the given XY-coordinates: $P(-5,3) ; \theta=30^{\circ}$
$v i$. Find the distance from the point $P(6,-1)$ to the line $6 x-4 y+9=0$.
vii. Convert the line $4 x+7 y-2$ into two intercepts form.
viii. Describe Solution Region.
ix. Show that the equations: $5 x^{2}+5 y^{2}+24 x+36 y+10=0 \quad$ represents a cirlce. Also find its centre and radius.
x . Write the standard equation of hyperbola.
xi. Find eccentricity and foci of the asymptotes of hyperbola $\frac{y^{2}}{16}-\frac{x^{2}}{49}=1$
xii. Find equations of the normal to each of the following at the indicated point: $\frac{x^{2}}{\not Z}+\frac{y^{2}}{b^{2}}=1 \quad$ at $(a \cos \theta, b \sin \theta)$

4- Write short answers to any EIGHT (8) of the following questions.
i. Evaluate the following integrals: $\int \frac{1}{6 x^{4}+5 x-4} d x$
ii. Find The area between $x$-axis and curve $y=5-x^{2} \quad$ from $x=-1 \quad$ to $x=2$.
iii. Define first order differential equation.
iv. Solve the differential equation: $\frac{1}{x} \frac{d y}{d x}-2 y=0, x \neq 0, y>0$
v. The points $A(-5,-2)$ and $B(5,-4)$ are ends of a diameter of circle. Find centre and radius of the circle.
vi. Find an equation of the line through $(-5,-3)$ and $(9,-1)$.
vii. Shade the feasible region of $4 x-3 y \leq 12$
viii. Define convex region.
ix. Define objective function.

Find the length of the tangent drawn from the point $(-5,4)$ to the circle $5 x^{2}+5 y^{2}-10 x+15 y-131=0$
xi. Derive standard equation of Parabola.

Which conics are called central conics?
xii.
xiii. Find an equation of each of the following with respect to new parallel axes obtained by shifting the origin to the indicated point: $9 x^{2}-4 y^{2}+36 x+8 y-4=0, O^{\prime}(-2,1)$

## (SECTION-II)

Attempt any THREE (3) questions.
5.(a) Find a joint equation of the lines through the origin and perpendicular to the lines $x^{2}-2 x y \tan \alpha-y^{2}=0$
(b) Evaluate $\int \frac{9 x+6}{x^{3}-8} d x$
6.(a) Maximize $f(x, y)=x+3 y \quad$ subject to the constraints: $2 x+5 y \leq 30 \quad ; 5 x+4 y \leq 20 \quad ; x \geq 0 ; y \geq 0$
(b) Find the lines represented by $3 x^{2}+7 x y+2 y^{2}=0$. Also find measure of the angle between them.
7.(a) For any point on the hyperbola the difference of its distances from the points $(2,2)$ and $(10,2)$ is 6 . Find an equation of the hyperbola.
(b) The vertices of a triangle are $\mathrm{A}(-2,3), \mathrm{B}(-4,1)$ and $\mathrm{C}(3,5)$. Find coordinates of the orthocentre. Are these three points collinear?
8.(a) Solve $\sec ^{2} x \tan y d x+\sec ^{2} y \tan x d y=0$
(b) Evaluate the following integrals: $\int \frac{3 x^{3}+4 x^{2} 99 x+5}{\left(x^{4}+x+1\right)\left(x^{4}+2 x+3\right)}$
9.(a) Evaluate $\int{ }_{-1}^{2}(x+|x|) d x$
(b) Show that the circles $x^{2}+y^{2}+2 x-2 y-7=0$ and $x^{2}+y^{2}-6 x+4 y+9=0$ touch externally.

## MCQs Ans Key.

| $\mathrm{Q}: 1(\mathrm{D})$ | $\mathrm{Q}: 2(\mathrm{~B})$ | $\mathrm{Q}: 3(\mathrm{C})$ | $\mathrm{Q}: 4(\mathrm{C})$ | $\mathrm{Q}: 5(\mathrm{D})$ | $\mathrm{Q}: 6(\mathrm{~B})$ |
| :--- | :--- | :--- | :--- | :--- | :--- |
| $\mathrm{Q}: 7(\mathrm{~B})$ | $\mathrm{Q}: 8(\mathrm{~B})$ | $\mathrm{Q}: 9(\mathrm{~B})$ | $\mathrm{Q}: 10(\mathrm{~A})$ | $\mathrm{Q}: 11(\mathrm{C})$ | $\mathrm{Q}: 12(\mathrm{~B})$ |
| $\mathrm{Q}: 13(\mathrm{~A})$ | $\mathrm{Q}: 14(\mathrm{C})$ | $\mathrm{Q}: 15(\mathrm{~A})$ | $\mathrm{Q}: 16(\mathrm{C})$ | $\mathrm{Q}: 17(\mathrm{C})$ | $\mathrm{Q}: 18(\mathrm{C})$ |
| $\mathrm{Q}: 19(\mathrm{D})$ | $\mathrm{Q}: 20(\mathrm{C})$ |  |  |  |  |

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| Name： |  | Roll\＃： |  | Class： | Inter Part－II |
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| Subject： | Pak Studies－12 | Date： |  | Time： |  |
| Test Type \＃ | Type 5－Full Test－Board Paper Patern－Marks＝50 |  |  |  |  |
| Test Syllabus： | Unit－1，Unit－2，Unit－3，Unit－4，Unit－5， |  |  |  |  |

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（B）
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（ $6 \times 2=12$ ）

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## MCQs Ans Key.

| $\mathrm{Q}: 1(\mathrm{~B})$ | $\mathrm{Q}: 2(\mathrm{C})$ | $\mathrm{Q}: 3(\mathrm{~B})$ | $\mathrm{Q}: 4(\mathrm{~B})$ | $\mathrm{Q}: 5(\mathrm{~A})$ | $\mathrm{Q}: 6(\mathrm{D})$ |
| :--- | :--- | :--- | :--- | :--- | :--- |
| $\mathrm{Q}: 7(\mathrm{D})$ | $\mathrm{Q}: 8(\mathrm{D})$ | $\mathrm{Q}: 9(\mathrm{~B})$ | $\mathrm{Q}: 10(\mathrm{D})$ |  |  |

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| Name: |  | Roll\#: |  | Class: | Inter Part-II |
| :--- | :--- | :--- | :--- | :--- | :--- |
| Subject: | Pak Studies-12 | Date: |  | Time: |  |
| Test Type \# | Type 5- Full Test - Board Paper Pattern - Marks=50 |  |  |  |  |
| Test Syllabus: |  |  |  |  |  |




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 ( $6 \times 2=12$ )



( $8 \times 2=16$ )
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## MCQs Ans Key.

| $\mathrm{Q}: 1(\mathrm{C})$ | $\mathrm{Q}: 2(\mathrm{~B})$ | $\mathrm{Q}: 3(\mathrm{~A})$ | $\mathrm{Q}: 4(\mathrm{C})$ | $\mathrm{Q}: 5(\mathrm{C})$ | $\mathrm{Q}: 6$ (D) |
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| $\mathrm{Q}: 7(\mathrm{C})$ | $\mathrm{Q}: 8$ (B) | $\mathrm{Q}: 9(\mathrm{D})$ | $\mathrm{Q}: 10(\mathrm{C})$ |  |  |

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| Name: |  | Roll\#: |  | Class: | Inter Part-II |
| :--- | :--- | :--- | :--- | :--- | :--- |
| Subject: | Physics-12 | Date: |  | Time: |  |
| Test Type \# | Type 16 - Full Test - Board Paper Pattern - Marks=85 |  |  |  |  |
| Test Syllabus: | Unit-12, Unit-13, Unit-14, Unit-15, Unit-16, |  |  |  |  |

1- Circle the correct one.
$(17 \times 1=17)$

1. If the medium between the charges is not free space then electrostatic force will:
(A) Increase
(B) Decrease
(C) Remain same
(D) None of these
2. Equation $\phi=E . A$ is applicable to surface.
(A) Spherical
(B) Cylindrical
(C) Conical
(D) Flat
3. A charge of $10^{-10} \mathrm{C}$ between two parallel plates 1 cm apart experience a force of $10^{-5} \mathrm{~N}$ :
(A) 10 V
(B) $10^{2} \mathrm{~V}$
(C) $10^{3} \mathrm{~V}$
(D) $10^{4} \mathrm{~V}$
4. A capacitor is perfect insulator for:
(A) Alternating current
(B) Sparking current
(C) Eddy current
(D) Direct current
5. A certain wire has a resistance $R$, the resistivity of an other wire of an identical material with the first, except for twice its diameter is:
(A) $\frac{1}{4} R$
(B) 4 R
(C) $2 R$
(D) Same as R
6. Two parallel wires carrying curent in the same direction:
(A) Have no effect
(B) Repel each other
(C) Have no field around them
(D) Attract each other
7. The magnetic force on an electron traveling with $10^{6} \mathrm{~ms}^{-1}$ parallel to a field strength $1 \mathrm{Web} \mathrm{m}^{-2}$ is:
(A) $10^{-12} \mathrm{~N}$
(B) Zero
(C) $10^{3} \mathrm{~N}$
(D) $1.6 \times 10^{-12} \mathrm{~N}$
8. The brightness of spot on CRO screen is controlled by:
(A) Anode
(B) Cathode
(C) Grid
(D) Deflecting plates
9. The CRO is used for:
(A) Displaying the wave form of frequency
(B) Displaying the wave form of given vibration
(C) Displaying wave form of given voltage
(D) Converting A.C into D.C
10. The rod of unit length is moving at $30^{\circ}$ through a magnetic field of 1 T . If the velocity of rod is $1 \mathrm{~m} / \mathrm{s}$, then induced emf in the rod will be given by:
(A) 1 V
(B) 0.25 V
(C) 0.5 V
(D) 0.6 V
11. Lenz's Law is a consequence of the Law of conservation of:
(A) Charge
(B) Current
(C) Energy
(D) Momentum
12. The Lenz's Law fulfils:
(A) Law of conservation of energy.
(B) Law of conservation of charge.
(C) Law of conservation of Momentum.
(D) Kirchhoff's Law.
13. Lenz's Law deals with:
(A) Magnitude of emf
(B) Direction of emf
(C) Direction of induced current
(D) Resistance
14. If $I_{O}$ is the peak value of an A.C supply then its $r m s$ value will be given as $I_{r m s}$ :
(A) $\frac{\mathrm{l}_{0}}{\sqrt{ } 2}$
(B) $\sqrt{ } \mathrm{ZI}_{0}$
(C) $\frac{l_{0}}{2}$
(D) 210
15. The slope of $q-t$ curve at any instant of time gives:
(A) current
(B) Voltage
(C) Charge
(D) Both A and B
16. The impedance of RLC series circuit at resonance is given by:
(A) $Z=\sqrt{ } R^{2}\left(\bar{X}_{L}^{--X_{C}}\right)^{2}$
(B) $Z=\sqrt{ } \overline{R 2}+\bar{X}$
(C) $Z=R$
(D) $Z=\sqrt{ } \overline{R 2}+\bar{X} \bar{Z}$
17. In R-L-C circuit the energy is dissipated in:
(A) R only
(B) R and L
(C) R and C
(D) R, L and C

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| Subject: | Physics-12 | Date: |  | Time: |  |
| Test Type \#: | Type 16 - Full Test - Board Paper Pattern - Marks=85 |  |  |  |  |
| Test Syllabus: | Unit-12, Unit-13, Unit-14, Unit-15, Unit-16, |  |  |  |  |

## (SECTION-I)

2- Write short answers to any EIGHT (8) of the following questions.
( $8 \times 2=16$ )
(i) ${ }^{\text {ls }}$ it true that gauss's law states that the total number of lines of forces crossing any closed surface in the outward direction is proportional to the net positive charge enclosed within the surface?
(ii)Why capacitance of a parallel plate capacitor increase in the presence of dielectric?
(iii)Define time constant for RC circuit also draw (q-t) graph for charging capacitor in RC circuit.
(iv) How much is the amount of charge at start of discharging of capacitor and start of charging of a capacitor.
(v) Is the filament resistance lower or higher in a 500W 220 V light bulb than in 100 W 220 V bulb?
(vi) How can you use a magnetic field to separate isotopes of chemical element?
(vii) What is function of Sweep generator in cathode ray oscilloscope?
(viii)ls it possible to orient a current loop in a uniform magnetic field such that the loop will not tend to rotate?
(ix) Does the induced emf always act to decrease the magnetic flux through a circuit?
(x) Define mutual induction. On what factors does mutual inductance of the two coil depend?
(xi)An A.C. voltmeter reads 250 V . What is its peak value? (xii) Write some/main advantages of three phase A.C supply.

3- Write short answers to any EIGHT (8) of the following questions.
$(8 \times 2=16)$
(i) How many are the number of electrons in one coulomb charge?
(ii)A wire of length 10 m has resistance $100 \Omega$. If the wire is stretched to increase its length three times what will be its new resistance.
(iii) Give colour code of carbon resistor. (iv) What are thermistors? How are they made? (v) State Kirchhoff's rules.
(vi) Define right hand rule for determining the direction of the magnetic field.
(vii) In a certain region the earth's magnetic field point vertically down, when a plane flies due to north, which wingtip is positively charged?
(viii)A suspended magnet is oscillating freely in a horizontal plane. The oscillations are strongly damped when a metal plate is placed under the magnet. Explain why this occurs?
(ix) What do you mean by phase lag and phase lead?
$(x)^{A}$ sinusoidal current rms Value of 15 A . What is the maximum or peak value?
(xi) In an R-L circuit with current lead or lag the voltage Explain by vector diagram.
(xii) Write two properties of R-L-C series circuit.

4- Write short answers to any SIX (6) of the following questions.
$(6 \times 2=12)$
(i)Define Electric force and Electrostatics. (ii)Define Coulomb's Law write its mathematical formula?
(iii) What will be the effect on coulombs force, if the distance between two point charges in increased two times?
(iv) What is the effect of medium between the charges upon coulomb's force? Explain.
(v)Comment on electric field in region of constant potential. (vi)State faraday's law. Also write its mathematical expression.
(vii)Define the S.I unit of mutual inductance.
(viii)A circuit contains an iron cored inductor, a switch and a D.C source arranged in series. The switch is closed and after an interval re-opened. Explain why a spark jumps across the switch contacts.
(ix) How many times per second will an incandescent lamp reach maximum brilliance when connected to a 50 Hz source?

## (SECTION-II)

## NOTE: Attempt any THREE (3) questions.

$(3 \times 8=24)$
5.(a) Describe the process of charging and discharging of $\mathrm{R}-\mathrm{C}$ series circuit what is the term "time constant"
(b) The resistance of an iron wire at $0^{U} \mathrm{C} 0^{0} \mathrm{C}$ is $1 \times 10^{-4} \Omega \quad 1 \times 10^{-4} \Omega$. What is the resistance at $500^{\mathrm{U}} \mathrm{C} 500^{\circ} \mathrm{C}$ if temperature. Coefficient of resistance of iron $5.2 \times 10^{-3} \mathrm{~K}-1 \quad 5.2 \times 10^{-3} \mathrm{~K}-1$
6. (a) Describe how charge to mass (e/m) ratio of an electron can be determined by projecting it perpendicular to a magnetic field.
(b) A metal rod of length 25 cm is moving at a sped of $0.5 \mathrm{~ms}^{-1}$ in a direction perpendicular to 0.25 T magnetic field. Find the emf produced in the rod.
7. (a) Find the value of current flowing through a capacitance $0.5 \mu \mathrm{~F}$, when connected to a source of 150 V at 50 Hz .
(b) Determine the electric field at the position $\vec{r}=(4 i+3 j) \quad$ caused by a point charge $q=5.0 \times 10^{-6} \mathrm{C}$ placed at origin.
8.(a) Derive the formula for energy stored in an inductor. Also define inductor.
(b) A platinum wire has resistance of $10 \Omega$ at $0^{\circ} \mathrm{C}$ and $20 \Omega$ at $273^{\circ} \mathrm{C}$. Find the value of temperature coefficient of resistance of platinum.
9.(a) What is wheat stone bridge? Give its principle, cosstruction and working. How can it be used to find unknown resistance of a write?
(b) What current should pass through a solenoid that is 0.5 m long with 10,000 turns of copper wire so that it will have a magnetic field of 0.4 T ?

## MCQs Ans Key.

| $\mathrm{Q}: 1(\mathrm{~B})$ | $\mathrm{Q}: 2(\mathrm{D})$ | $\mathrm{Q}: 3(\mathrm{C})$ | $\mathrm{Q}: 4(\mathrm{D})$ | $\mathrm{Q}: 5(\mathrm{~B})$ | $\mathrm{Q}: 6$ (D) |
| :--- | :--- | :--- | :--- | :--- | :--- |
| $\mathrm{Q}: 7(\mathrm{~B})$ | $\mathrm{Q}: 8(\mathrm{C})$ | $\mathrm{Q}: 9(\mathrm{C})$ | $\mathrm{Q}: 10(\mathrm{C})$ | $\mathrm{Q}: 11(\mathrm{C})$ | $\mathrm{Q}: 12(\mathrm{~A})$ |
| $\mathrm{Q}: 13(\mathrm{C})$ | $\mathrm{Q}: 14(\mathrm{~A})$ | $\mathrm{Q}: 15(\mathrm{~A})$ | $\mathrm{Q}: 16(\mathrm{D})$ | $\mathrm{Q}: 17(\mathrm{~A})$ |  |

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| Subject: | Physics-12 | Date: |  | Time: |  |
| Test Type \# | Type 16 - Full Test - Board Paper Pattern - Marks=85 |  |  |  |  |
| Test Syllabus: | Unit-17, Unit-18, Unit-19, Unit-20, Unit-21, |  |  |  |  |

1- Circle the correct one.

1. A pentavelent impurity is:
(A) Boron
(B) Alumimium
(C) Indium
(D) Phosphorous
2. The potential barrier for germanium is:
(A) 0.3 V
(B) 0.5 V
(C) 0.7 V
(D) 0.9 V
3. A pn junction can not be used as:
(A) Rectifier
(B) Amplifier
(C) Detector
(D) LED
4. Reverse current through a semi conductor is due to:
(A) Majority charge carriers
(B) Minority charge carriers
(C) Electrons
(D) Holes
5. Photo diode detects:
(A) Visible light
(B) Radio waves
(C) X-rays
(D) All of them
6. Energy of black body radiation depends upon:
(A) Nature of surface of body
(B) Nature of material of body
(C) Shape and size of body
(D) Temperature of the body
7. The wave-length of emitted radiation of maximum intensity is inversely proportional to the absolute temperature. This is known as:
(A) Faraday's law
(B) Rayleigh Jean's law
(C) Stefan's law
(D) Wien's displacement law
8. The materialization of energy take place in the process of:
(A) Photoelectric Effect
(B) Compton Effect
(C) Pair production
(D) Annihilation of Matter
9. Photoelectric effect shows:
(A) Corpuscular nature of light
(B) Dual nature of light
(C) Electromagnetic nature of light
(D) Wave nature of light
10. The value of radius of $1^{\text {st }}$ Bohr's orbit is:
(A) 0.53 nm
(B) 0.053 nm
(C) 0.0053 nm
(D) 0.00053 nm
11. The energy of electron in ground state of hydrogen atom is -13.6 eV , then its energy in fourth orbit is:
(A) -3.4 eV
(B) -0.85 eV
(C) -54.4 eV
(D) -13.6 eV
12. The diameter of an atom is of order of:
(A) $10^{-8} \mathrm{~m}$
(B) $10^{-10} \mathrm{~m}$
(C) $10^{-12} \mathrm{~m}$
(D) $10^{-14} \mathrm{~m}$
13. $\mathrm{k}_{\alpha}-\mathrm{x}$ rays are produced due to transition of electrons from:
(A) $K$ to $L$ shell
(B) L To $K$ shell
(C) M to K shell
(D) $M$ to $L$ shell
14. An excited atom can reside in a meta stable state for:
(A) $10^{-1} \mathrm{~s}$
(B) $10^{-2} \mathrm{~s}$
(C) $10^{-3} \mathrm{~s}$
(D) $10^{-4} \mathrm{~s}$
15. Laser is a beam of light which is:
(A) Monochromatic
(B) Coherent
(C) Unidirectional
(D) All of these
16. Half life of Uranium-239 is:
(A) 26.5 minutes
(B) 24.5 minutes
(C) 25.5 minutes
(D) 23.5 minutes
17. If we have $N_{o}$ number of atoms of any radioactive element, then after four half lives, the number of atoms left behind is:
(A) $\frac{1}{4} \mathrm{~N}_{0}$
(B) $\frac{1}{8} \mathrm{~N}_{\mathrm{o}}$
(C) $\frac{1}{1} \mathrm{~N}_{0}$
(D) $\frac{1}{2} \mathrm{~N}_{\mathrm{o}}$

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| Subject: | Physics-12 | Date: |  | Time: |  |
| Test Type \#: | Type 16 - Full Test - Board Paper Pattern - Marks=85 |  |  |  |  |
| Test Syllabus: | Unit-17, Unit-18, Unit-19, Unit-20, Unit-21, |  |  |  |  |

## (SECTION-I)

2- Write short answers to any EIGHT (8) of the following questions.
(8x2=16)
(i)What is meant by strain energy. (ii) What are paramagnetic substances? Give an example. (iii)Where are squids? Explain. (iv)Distinguish between soft magnetic materials and hard magnetic materials.
(v)Define rectification. Draw a circuit diagram of half wave rectifier.
(vi)What is the principle of virtual ground? Apply it to find the gain of an inverting amplifier.
(vii)Why do not we observe a Compton effect with visible light?
(viii)What advantages an electron microscope has over an optical microscope?
(ix)State uncertainty principle. Give its two mathematical froms. ( $x$ ) ls energy conserved when an atom emits a photon of light? (xi) Define decay constant and write its Unit. (xii) Differentiate between controlled and un-controlled chain reaction.

## 3- Write short answers to any EIGHT (8) of the following questions.

(i) What are the responsible factors for production of magnetic field in an atom?
(ii)What is meant by Para, Dia magnetic substances? Give example for each. (iii)How is P-n junction formed?
(iv) How does the motion of an electron in a n-type differ from the motion of holes in a p-type substances?
(v) Name three basic characteristics of Op-Amp. Also give their approximate values.
(vi) Photon $A$ has twice the energy of photon $B$. What is the ratio of the momentum of $A$ to that of $B$ ?
(vii)Write equation of pair production. (viii) ${ }^{\text {ls }}$ it possible to create a single electron from energy? Explain.
(ix) Write down two uses of LASER in industry.
( x$)^{\text {Define half life of radioactive element. What is the relation between half life and decay constant? (xi) What is fusion reaction? }}$ (xii)What are Hadrons? Give one example.

4- Write short answers to any SIX (6) of the following questions.
(i)Define depletion region and potential barrier. (ii)Why charge carries are not present in depletion region?
(iii) Why a photo diode is operated in reverse biased state?
(iv) What do you understand by work function and stopping potential?
(v) If the following particles have same energy which has the shortest wave length alpha particle or neutron.
(vi) Bohr's theory of Hydrogen atomis based on several assumptions. Do any of these contradict classical physics.
(vii) Describe a brief account of interaction various types of radiations with matter.
(viii)Why Geiger counter is not suitable for fast counting? (ix) Write a short note on basic forces of nature.

## (SECTION-II)

## NOTE: Attempt any THREE (3) questions.

5.(a) Define stress and strain. Write a note on Young's Bulk and shear modulus.
(b) A cylindrical copper wire and a cylindrical steel wire each of length 1.5 m and diameter 2.0 mm are joined at one end to form a composite wire 3.0 m I ong. The wire is loaded until its length becomes 3.003 m . Calculate the strain in copper and steel wires and the force applied to the wire. (Young's modulus of copper is $1.2 \times 10^{11} \mathrm{~Pa} \quad$ and for steel is $2.0 \times 10^{11} \mathrm{~Pa} \quad$ ).
6.(a) What is radioactivity? Discuss emission of alpha and beta and gamma radiations from radioactive nuclei.
(b) Find the mass defect and the binding energy for Tritium if the atomic mass of tritium is 3.016049 U .
7.(a) Write a note on Compton effect.
(b) An electron is accelerated through a potential difference of 50 V calculate its de-Broglie's wavelength.
8.(a) What is operational amplifier describe its characteristics. Also discuss operational amplifier as non-inverting amplifier.
(b) X-rays of wave length 22 pm are scattered from a carbon target. The scattered radiation being viewed at $85^{\circ}$ to the incident beam. What is compton shift?
9.(a) Describe the formation of energy bands in solids. Explain the difference among electrical behaviour of conductors insulators and semi conductors in terms of energy band theory.
(b) What is operational amplifier? Discuss the action of op.amp as inverting and non-inverting amplifier. Also calculate voltage gain in each case.

## MCQs Ans Key.

| $\mathrm{Q}: 1(\mathrm{D})$ | $\mathrm{Q}: 2(\mathrm{~A})$ | $\mathrm{Q}: 3(\mathrm{~B})$ | $\mathrm{Q}: 4(\mathrm{~B})$ | $\mathrm{Q}: 5(\mathrm{~A})$ | $\mathrm{Q}: 6(\mathrm{D})$ |
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| $\mathrm{Q}: 7(\mathrm{~B})$ | $\mathrm{Q}: 8(\mathrm{C})$ | $\mathrm{Q}: 9(\mathrm{~A})$ | $\mathrm{Q}: 10(\mathrm{~B})$ | $\mathrm{Q}: 11(\mathrm{~B})$ | $\mathrm{Q}: 12(\mathrm{~B})$ |
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## MCQs Ans Key.

| $\mathrm{Q}: 1(\mathrm{C})$ | $\mathrm{Q}: 2(\mathrm{~B})$ | $\mathrm{Q}: 3(\mathrm{~B})$ | $\mathrm{Q}: 4(\mathrm{~B})$ | $\mathrm{Q}: 5(\mathrm{~A})$ | $\mathrm{Q}: 6(\mathrm{C})$ |
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| $\mathrm{Q}: 7(\mathrm{~B})$ | $\mathrm{Q}: 8$ (D) | $\mathrm{Q}: 9(\mathrm{C})$ | $\mathrm{Q}: 10(\mathrm{D})$ | $\mathrm{Q}: 11(\mathrm{C})$ | $\mathrm{Q}: 12$ (D) |
| $\mathrm{Q}: 13(\mathrm{~B})$ | $\mathrm{Q}: 14(\mathrm{~A})$ | $\mathrm{Q}: 15(\mathrm{C})$ | $\mathrm{Q}: 16(\mathrm{~A})$ | $\mathrm{Q}: 17(\mathrm{~B})$ | $\mathrm{Q}: 18$ (D) |
| $\mathrm{Q}: 19(\mathrm{~A})$ | $\mathrm{Q}: 20(\mathrm{~A})$ |  |  |  |  |

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## MCQs Ans Key.

| $\mathrm{Q}: 1(\mathrm{~B})$ | $\mathrm{Q}: 2(\mathrm{~B})$ | $\mathrm{Q}: 3(\mathrm{~B})$ | $\mathrm{Q}: 4(\mathrm{C})$ | $\mathrm{Q}: 5(\mathrm{D})$ | $\mathrm{Q}: 6(\mathrm{C})$ |
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| Subject: | Biology-12 | Date: |  | Time: |  |
| Test Type \# | Type 15 - Full Test - Board Paper Pattern - Marks=85 |  |  |  |  |
| Test Syllabus: | Unit-15, Unit-16, Unit-17, Unit-18, Unit-19, Unit-20, |  |  |  |  |

1- Circle the correct one.
(17×1=17)

1. Which of the following is called as excretophore i.e. contributing mainly in the elimination of wastes in plants?
(A) stem
(B) roots
(C) leaves
(D) flowers
2. The excretory product that requires maximum water for its removal is:
(A) Ammonia
(B) Creatinine
(C) Urea
(D) Uric Acid
3. The high degree renal failure is called:
(A) Uremia
(B) End stage Renal Disease
(C) Both A \& B
(D) Uredecty
4. Haptonastic movements occur in response to:
(A) Contact
(B) Chemical
(C) Temperature
(D) Water
5. The word tropic is derived from Greek word "Tropos" meaning:
(A) Sticky
(B) Turn
(C) Attractive
(D) Growth
6. Joints that are held together by short fibers embedded in connective tissue:
(A) Fibrous Joints
(B) Cartilaginous Joint
(C) Synovial Joints
(D) Hinge Joints
7. Rickets is due to deficiency of vitamin:
(A) A
(B) $C$
(C) D
(D) E
8. The plant hormone which inhibits growth and promotes seed and bud dormancy is:
(A) Auxin
(B) Gibberellins
(C) Cytokinnins
(D) Abscisic Acid
9. Maximum speed of nerve impulse transmission is:
(A) $100 \mathrm{~m} / \mathrm{s}$
(B) $110 \mathrm{~m} / \mathrm{s}$
(C) $120 \mathrm{~m} / \mathrm{s}$
(D) $130 \mathrm{~m} / \mathrm{s}$
10. A nerve is:
(A) Collection of neurons
(B) Bundle of axons or dendrites
(C) Connection of dendrites
(D) Bundle of axon or Dendrites bounded by connection
11. Metal illness causes:
(A) Goiter
(B) Anaemia
(C) Alzheimer
(D) Scurvy
12. Fruitripeningis often accompanied by burst of respiratory activity called:
(A) Apomixes
(B) Climacteric
(C) Photoperiodism
(D) Endosperm
13. Rapid aging and less resistance to environmental stress and diseases are limitations of:
(A) Parthenocarpy
(B) Vernalization
(C) Cloning
(D) Phototropism
14. Haploid males produce sperms by mitosis:
(A) Hydra
(B) Earth worm
(C) Honey bee
(D) Man
15. Luteinizing hormone induces.
(A) Flowering
(B) Vernalization
(C) Menopause
(D) Ovulation
16. In the zone of elongation; the volume of the cells increase upto:
(A) 100 times
(B) 150 times
(C) 200 times
(D) 250 times
17. Immediately after fertilization, the egg undergoes a series of mitotic divisions called:
(A) Morulla
(B) Gastrulaion
(C) Cleavage
(D) Blastula

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| Name: |  | Roll\#: |  | Class: | Inter Part-II |
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| Subject: | Biology-12 | Date: |  | Time: |  |
| Test Type \#: | Type 15 - Full Test - Board Paper Pattern - Marks=85 |  |  |  |  |
| Test Syllabus: | Unit-15, Unit-16, Unit-17, Unit-18, Unit-19, Unit-20, |  |  |  |  |

## (SECTION-I)

2- Write short answers to any EIGHT (8) of the following questions.
i. Compare physical control system with living control system.
ii. Why leaves are said to be excretophores.
iii. Write a short note on Kidney transplantation.
iv. What are heat shock proteins?
v. Define endotherms and ectotherms.
vi. Explain Haptonastic movements by giving an example.
vii. What is Rickets?
viii. What is osteoporosis? Why it occurs in aged woman?
ix. Give two Functions of Abscisic acid.
$x$. Write down the functions of sympathetic nervous system.
xi. Define fruit.
xii. Differentiate between vascular andcork cambium.

3- Write short answers to any EIGHT (8) of the following questions.
i. Compare Osmoconformers and Osmoregulations.
ii. Describe Pelvic Girdle and Hind limb in human skeleton.
iii. What is Saltatory Impulse?
iv. Differentiate active membrane potential from resting membrane potential.
v. What are Cranial Nerves?
vi. What is the action of Nicotine on coordination?
vii. What are Apomixes?
viii. What is Blastoderm? Name its layers.
ix. Give role of gray crescent area during development.
x. Enlist types of cytoplasm an the base of colours in fertilized egg of an Ascidians.
xi. What are neoblasts?
xii. What is meant by universality of genetic code?

4- Write short answers to any SIX (6) of the following questions.
i. Name Bones of Pelvice girdle:
ii. How callus is formed?
iii. Explain briefly Hematoma Formation:
iv. What are Nissl's granule?
v. What is Epilepsy?
vi. What is the main function of parathyroid gland.
vii. Give some advantages and disadvantages of cloning.
viii. What is Karyotype?
ix. How did Crick and his colleagues determine how many nucleotides are used to specify each amino acids?
(SECTION-II)
NOTE: Attempt any THREE (3) questions.
5.(a) Describe thermoregulation in mammals
(b) Write the major evolutionary adaptation in the lines of tetrapod.
6.(a) Discuss hormones of anterior Lobe of pituitary gland.
(b) What are joints? Explain various types of joints?
7.(a) Discus the process of birth in human female.
(b) Describe double helical structure of DNA. (Watson and Crick's model)
8.(a) Describe the various types of Meristems.
(b) Discuss the nature of excretory products in different habitats.
9.(a) Give an account of innate behaviour.
(b) Sketch the life cycle of an Angiosperm.

## MCQs Ans Key.

| $\mathrm{Q}: 1(\mathrm{C})$ | $\mathrm{Q}: 2(\mathrm{~A})$ | $\mathrm{Q}: 3(\mathrm{C})$ | $\mathrm{Q}: 4(\mathrm{~A})$ | $\mathrm{Q}: 5(\mathrm{~B})$ | $\mathrm{Q}: 6(\mathrm{~A})$ |
| :--- | :--- | :--- | :--- | :--- | :--- |
| $\mathrm{Q}: 7(\mathrm{C})$ | $\mathrm{Q}: 8(\mathrm{D})$ | $\mathrm{Q}: 9(\mathrm{C})$ | $\mathrm{Q}: 10(\mathrm{D})$ | $\mathrm{Q}: 11(\mathrm{C})$ | $\mathrm{Q}: 12(\mathrm{~B})$ |
| $\mathrm{Q}: 13(\mathrm{C})$ | $\mathrm{Q}: 14(\mathrm{C})$ | $\mathrm{Q}: 15(\mathrm{D})$ | $\mathrm{Q}: 16(\mathrm{~B})$ | $\mathrm{Q}: 17(\mathrm{C})$ |  |

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| Subject: | Biology-12 | Date: |  | Time: |  |
| Test Type \# | Type 15 - Full Test - Board Paper Pattern - Marks=85 |  |  |  |  |
| Test Syllabus: | Unit-21, Unit-22, Unit-23, Unit-24, Unit-25, Unit-26, Unit-27, |  |  |  |  |

1- Circle the correct one.
$(17 \times 1=17)$

1. The number of sets of microtubules originate from each pair of centriole is:
(A) 03
(B) 04
(C) 05
(D) 06
2. Microtubules are composed of:
(A) Tubulin
(B) Insulin
(C) Haemoglobin
(D) Adrenaline
3. The chromatin material gets condensed by folding and chromosomes appear as thin thread in mitosis at the beginning of:
(A) Interphase
(B) Prophase
(C) Metaphase
(D) Anaphase
4. What are significant happening of meiosis:
(A) Crossing over
(B) Random assortment of chromosomes
(C) Linkage
(D) Crossing over and random assortment of
5. The pairing of homologous chromosomes occurs during:
(A) Leptotene
(B) Zygotene
(C) Pachytene
(D) Diplotene
6. Which is the basis unit of biological information.
(A) Gene
(B) Allele
(C) Both
(D) Mutation
7. In 1901, ABO group system was discovered by:
(A) Punnet
(B) Karl Landsteiner
(C) Bern Stein
(D) Wiener
8. PCR takes its name from $\qquad$ the enzyme that carries out DNA replication in a cell:
(A) DNA Polymerase
(B) DNA Polymerase II
(C) DNA Ligase
(D) Restriction enzymes
9. Which is not a biotechnology product?
(A) Hepatitis B
(B) Tissue plasminogen Activator
(C) Human Growth Hormone
(D) Hemophilia factor I
10. Organisms that have had a foreign gene inserted into them are called:
(A) Transgenic organisms
(B) Hermaphrodites
(C) Polygenesis
(D) Transmuted organisms
11. The change in frequency of alleles at locus that occur by chance is called:
(A) Mutation
(B) Migration
(C) Genetic Drift
(D) Selection
12. A group of similar organisms living together in space and time is called:
(A) community
(B) population
(C) species
(D) orders
13. If population of predator increase then population of prey:
(A) Increases
(B) Decreases
(C) May increase
(D) Has no effect or decrease
14. Grassland ecosystem in Pakistan is found in:
(A) Chilas
(B) Chitral
(C) Dir
(D) Swat
15. Which biomes has been increased in area by human activities?
(A) Grass land
(B) Savanna
(C) Coniferous
(D) Desert
16. A treasure of all types of resources essential to maintain life on earth:
(A) Environment
(B) Water
(C) Land
(D) Sun
17. Establishment of new forests, where no forests existed before is called:
(A) Deforestation
(B) Desertification
(C) Reforestation
(D) Afforestation

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| Subject: | Biology-12 | Date: |  | Time: |  |
| Test Type \#: | Type 15 - Full Test - Board Paper Pattern - Marks=85 |  |  |  |  |
| Test Syllabus: | Unit-21, Unit-22, Unit-23, Unit-24, Unit-25, Unit-26, Unit-27, |  |  |  |  |

## (SECTION-I)

2- Write short answers to any EIGHT (8) of the following questions.
(8x2=16)
i. What is a malignant tumor?
ii. Define true breedings.
iii. What is Multifactorial trait? Give an example.
iv. How cancer patients are being treated by gene therapy?
v. What is vestigial organs?
vi. What are vestigial organs? Give two examples.
vii. What is non - random mating?
viii. Define population genetics.
ix. Name three levels of integration in community?
x . What are Root Nodules?
xi. What is Nuclear Energy?
xii. What is Ozone layer and its advantages?

3- Write short answers to any EIGHT (8) of the following questions.
i. Give four importance of mitosis.
ii. What is metastasis? Give two properties of cancer cells.
iii. In what respect does mitosis in plant cells differ from that in animal cells?
iv. Discuss diakinesis phase of meiosis.
v. Differentiate between gene and gene pool.
vi. What is law of Segregation?
vii. Does the dominant allele modify the determinative nature of its recessive partner?. What sort of relationship do they have?
viii. How to get a gene?
ix. Write role of DNA Ligase.

What is gene pharming?
Give the importance of population genetics in evolution.
Describe briefly human impact on grass land Ecosystem.
4- Write short answers to any SIX (6) of the following questions.
i. Define meiosis and mitosis.
ii. What changes occur cell during metaphase of mitosis.
iii. Define Crossing Over.
iv. What is multifactorials inheritance?
v. What is difference between parasite and parasitism?
vi. How nitrogen is depleted from soil and how nitrogen resources are strengthened?
vii. Give adaptations in organisms for terrestrial ecosystem.
viii. Differentiate between Alpine and Boreal forests.
ix. Write two effects of acid rain.

## (SECTION-II)

NOTE: Attempt any THREE (3) questions.
5.(a) Describe Prophase-I of meiosis in detail.
(b) Describe the Mendel's Law of Independent Assortment with an example.
6.(a) Write note on Hardy-Weinberg theorem.
(b) What is the polymerase chain reaction (PCR), and how is it carried out to produce multiple copies of a DNA segment?
7.(a) Define biochemical cycles. Explain nitrogen cycle with the help of diagram.
(b) Write a short note on Neo-Darwinism.
8.(a) Describe nitrogen cycle as it occurs in nature.
(b) Describe the importance of forests?
9.(a) What are the four major requirements for life? Which two are limiting in terestrial ecosystem?
(b) Why and how do the chromosomes get separated during anaphase of mitosis?

## MCQs Ans Key.

| $\mathrm{Q}: 1(\mathrm{~A})$ | $\mathrm{Q}: 2(\mathrm{~A})$ | $\mathrm{Q}: 3(\mathrm{~B})$ | $\mathrm{Q}: 4(\mathrm{D})$ | $\mathrm{Q}: 5(\mathrm{~B})$ | $\mathrm{Q}: 6(\mathrm{~A})$ |
| :--- | :--- | :--- | :--- | :--- | :--- |
| $\mathrm{Q}: 7(\mathrm{~B})$ | $\mathrm{Q}: 8(\mathrm{~A})$ | $\mathrm{Q}: 9(\mathrm{~A})$ | $\mathrm{Q}: 10(\mathrm{~A})$ | $\mathrm{Q}: 11(\mathrm{C})$ | $\mathrm{Q}: 12(\mathrm{~B})$ |
| $\mathrm{Q}: 13(\mathrm{~B})$ | $\mathrm{Q}: 14(\mathrm{~B})$ | $\mathrm{Q}: 15(\mathrm{D})$ | $\mathrm{Q}: 16(\mathrm{~A})$ | $\mathrm{Q}: 17(\mathrm{D})$ |  |

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| Subject: | Chemistry-12 | Date: |  | Time: |  |
| Test Type \# | Type 15 - Full Test - Board Paper Pattern - Marks=85 |  |  |  |  |
| Test Syllabus: | Unit-1, Unit-3, Unit-7, Unit-8, Unit-9, Unit-10, Unit-2, |  |  |  |  |

1- Circle the correct one.

1. Number of elements in the first period of the periodic table is:
(A) 2
(B) 8
(C) 14
(D) 18
2. Which is the longest period of periodic table:-
(A) 4
(B) 5
(C) 6
(D) 7
3. Which of the following statement is correct?
(A) Na atom is smaller than $\mathrm{Na}^{+}$
(B) Na atom is larger than K atom
(C) F atom is smaller than $\mathrm{F}^{-}$
(D) $F$ atom is larger than $F$
4. Correct order according to atomic size in the following is:
(A) $\mathrm{Na}>\mathrm{K}$
(B) $\mathrm{Be}>\mathrm{Mg}$
(C) $\mathrm{O}>\mathrm{N}$
(D) $\mathrm{Cl}>\mathrm{F}$
5. Which is the correct statement.
(A) $\mathrm{C}_{\bar{T}}^{-}$is smaller than Cl atom
(B) $\mathrm{Cl}^{-}$(ion) and Cl (atom) are equal in size.
(C) $\mathrm{Na}^{+}$is smaller than Na atom
(D) $\mathrm{Na}^{+}$is larger than Na tom
6. Mark the correct statement:
(A) All lanthanides are present in the same group.
(B) All halogens are present in the same period.
(C) All the alkali metals are present in the same group.
(D) All the noble gases are present in the same period.
7. Mark the correct statement:
(A) Melting points of halogens decrease down the group.
(B) Melting points of halogens increase down the group.
(C) Melting points of halogens remain the same
(D) Melting points of halogens first increase and then decrease down the group.
8. Which one of the following elements is no alkali metal:
(A) Na
(B) Sr
(C) Cs
(D) Fr
9. Formula of epson salt is:
(A) $\mathrm{MgSO}_{4} \cdot 7 \mathrm{H}_{2} \mathrm{O}$
(B) $\mathrm{MgSO}_{4}$
(C) $\mathrm{MgCO}_{3}$
(D) $\mathrm{CaMg}_{3}\left(\mathrm{SiO}_{3}\right)^{4}$
10. Element Cs (Cesium) shows resemblance with:
(A) Ca
(B) Cr
(C) both a , b
(D) Fr
11. Which one of the following is not an alkali metal?
(A) Francium
(B) Caesium
(C) Rubidium
(D) Radium
12. Which one is the heterocyclic compound of oxygen?
(A) Pyrridine
(B) Parrole
(C) Furan
(D) Thiophene
13. The state of hybridization of " $C$ " in ethane is:
(A) SP
(B) $\mathrm{sp}^{2}$
(C) $\mathrm{dsp}^{2}$
(D) $\mathrm{sp}^{3}$
14. Tautomerism arises due to shifting of:
(A) Sigma Electrons
(B) Neutron
(C) Pi-Electrons
(D) Proton
15. Conversion of unsaturated hydro carbons to saturated hydrocarbons in the presence of catalyst is called as:
(A) Halogenation
(B) Hydrogenation
(C) Hydroxylation
(D) Dehydrogenation
16. Formula of chloroform is:
(A) $\mathrm{CH}_{3} \mathrm{Cl}$
(B) $\mathrm{CCl}_{4}$
(C) $\mathrm{CH}_{2} \mathrm{Cl}_{2}$
(D) $\mathrm{CHCl}_{3}$
17. The general formula for Alkene having one double bond is:
(A) $\mathrm{C}_{\mathrm{n}} \mathrm{H}_{2 \mathrm{n}+1}$
(B) $\mathrm{C}_{\mathrm{n}} \mathrm{H}_{2 \mathrm{n}}$
(C) $\mathrm{C}_{\mathrm{n}} \mathrm{H}_{2 \mathrm{n}-2}$
(D) $\mathrm{C}_{\mathrm{n}} \mathrm{H}_{2 \mathrm{n}+2}$

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| Test Type \#: | Type 15 - Full Test - Board Paper Pattern - Marks=85 |  |  |  |  |
| Test Syllabus: | Unit-1, Unit-3, Unit-7, Unit-8, Unit-9, Unit-10, Unit-2, |  |  |  |  |

## (SECTION-I)

2- Write short answers to any EIGHT (8) of the following questions.
(i) Explain the variation in melting points along the short periods.
(ii) How does lanthanide contraction control the atomic size of elements of $6^{\text {th }}$ and $7^{\text {th }}$ periods?
(iii) Give the names along with the formulas of three important ores of aluminium.
(iv) How aluminum reacts with dilute and concentrated sulphuric acid? (v) Define metamerism with example?
(vi) What are clemmensen and Wolf-Kishner reduction reactions? How they differ?
(vii) Prepare Cis and Trans alkenes from Alkyne along with chemical equation.
(viii) How may ethene be converted into ethyl alcohol? (ix) Describe X-rays structure of Benzene.
(x) What are primary and tertiary alkyl halides? Give one example each.
(xi) Define alkyl halide. Which is the best method of preparing alkyl halides?
(xii) How will you prepare diethyl amine from $\mathrm{C}_{2} \mathrm{H}_{5} \mathrm{Br}$ ?

3- Write short answers to any EIGHT (8) of the following questions.
$(8 \times 2=16)$
(i) Melting points of group VII-A elements increase down the group. Why?
(ii) How will you distinguish between ethanol and propanal? (iii) What is action of heat on orthoboric acid, $\mathrm{H}_{3} \mathrm{BO}_{3}$ ?
(iv) What is atomic orbital hybridization? Name its any two types. (v) Define Tautomerism by giving one example.
(vi) Draw structures of 2-methyl-2-butene and 5-methyl-2-hexene. (vii) Why does Alkane show least-reactivity?
(viii) How would you prepare acetone from propyne? (ix) Draw the structures of (i) Naphthalene (ii) Anthracene.
(x) Give Reaction of Benzene withSO3 . (xi) Give two addition reactions of benzene.
(xii) What happens when acidified $\mathrm{KMnO}_{4}$ is added to methyl benzene and ethyl benzene?

4- Write short answers to any SIX (6) of the following questions.
$(6 \times 2=12)$
(i) Why hydration energy decreases in a group and increase in a period of periodic table?
(ii) Why oxidation number of noble gases is usually zero?
(iii) Why does ionic character of halides decreases from left to right in a period?
(iv) Give two similar properties of Lithium and Magnesium? (v) How Aluminum reacts with $\mathrm{H}_{2} \mathrm{SO}_{4}$.
(vi) How will you convert methane into ethane. (vii) Compare the physical properties of alkanes, alkenes and alkynes.
(viii) Draw structural formulas of $p$ - nitrotoluene and $p$ - Dibenzyl benzene.
(ix) What are elimination reactions? Give examples of $E_{1}$ and $E_{2}$.

## (SECTION-II)

## Attempt any THREE (3) questions.

5.(a) Explain peculiar behaviour of Beryllium?
(b) Discuss position of hydrogen with carbon family giving similarities and dissimilarities.
6.(a) Write four peculiar behaviour of Boron?
(b) What is orbital hybridization? Explain $\mathrm{Sp}^{3} \mathrm{Sp}^{3}$-hybridization of carbon.
7.(a)Prepare Ethane from Kolbe's Electrolytic method, write down its mechanism?
(b) What are Aromatic Hydrocarbons? How are they classified?
8.(a)Define polymerization, explain polymerization reaction of acetylene.
(b) Compare $E_{2}$ and $E_{1}$ mechanism for $\beta$-Elimination reactions?
9.(a) Explain the structure of Benzene on the basis of atomic orbital treatment.
(b) Define Nucleophilic substitution reaction and discuss the salient features of $S_{N} 1$ reactions.

## MCQs Ans Key.

| $\mathrm{Q}: 1(\mathrm{~A})$ | $\mathrm{Q}: 2(\mathrm{C})$ | $\mathrm{Q}: 3(\mathrm{C})$ | $\mathrm{Q}: 4(\mathrm{D})$ | $\mathrm{Q}: 5(\mathrm{C})$ | $\mathrm{Q}: 6(\mathrm{C})$ |
| :--- | :--- | :--- | :--- | :--- | :--- |
| $\mathrm{Q}: 7(\mathrm{~B})$ | $\mathrm{Q}: 8$ (B) | $\mathrm{Q}: 9(\mathrm{~A})$ | $\mathrm{Q}: 10(\mathrm{D})$ | $\mathrm{Q}: 11(\mathrm{D})$ | $\mathrm{Q}: 12(\mathrm{C})$ |
| $\mathrm{Q}: 13(\mathrm{D})$ | $\mathrm{Q}: 14(\mathrm{D})$ | $\mathrm{Q}: 15(\mathrm{~B})$ | $\mathrm{Q}: 16(\mathrm{D})$ | $\mathrm{Q}: 17(\mathrm{~B})$ |  |

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| Subject: | Chemistry-12 | Date: |  | Time: |  |
| Test Type \# | Type 15 - Full Test - Board Paper Pattern - Marks=85 |  |  |  |  |
| Test Syllabus: | Unit-4, Unit-5, Unit-6, Unit-11, Unit-12, Unit-13, Unit-15, |  |  |  |  |

1- Circle the correct one.

1. Out of all the elements of group VA, the highest ionization energy is possessed by:-
(A) N
(B) As
(C) Sb
(D) Bi
2. Gold dissolves in "Aqua Regia" due to formation of Halide. Point out correct halide.
(A) $\mathrm{AuF}_{3}$
(B) $\mathrm{AuCl}_{3}$
(C) $\mathrm{AuBr}_{3}$
(D) $\mathrm{Aul}_{3}$
3. The oxidation of NO in air produces:
(A) $\mathrm{N}_{2} \mathrm{O}_{3}$
(B) $\mathrm{NO}_{2}$
(C) $\mathrm{N}_{2} \mathrm{O}_{3}$
(D) $\mathrm{N}_{2} \mathrm{O}_{4}$
4. In group V -A elements the most electronegative element is:
(A) Sb
(B) N
(C) $P$
(D) As
5. Which halogen will react spontaneously with $\mathrm{Au}(\mathrm{s})$ to produce $\mathrm{Au}^{3+}$ ?
(A) $\mathrm{Br}_{2}$
(B) $F_{2}$
(C) $\mathrm{I}_{2}$
(D) $\mathrm{Cl}_{2}$
6. Oxidation state ofCu in $\mathrm{K}_{2}\left[\mathrm{Cu}(\mathrm{CN})_{4}\right]$ is:
(A) +4
(B) +3
(C) +2
(D) +6
7. Maximum number of unpaired elections are in cation:
(A) $\mathrm{Ni}^{2+}$
(B) $\mathrm{Co}^{2+}$
(C) $\mathrm{Mn}^{2+}$
(D) $\mathrm{Fe}^{2+}$
8. The most-reactive alcohol when O-H bond breaks is:
(A) Tertiary alcohol
(B) Secondary alcohol
(C) Primary alochol
(D) Methyl alcohol
9. Bakelite is obtained from phenol by reacting with:
(A) Acetal
(B) Ethanal
(C) Formaldehyde
(D) Methanol
10. Aldehyde react with hydroxyl amine in acidic solution to give:
(A) An oxime
(B) Aldol
(C) Polymer
(D) Acetic acid
11. Which reaction is disproportionation reaction?
(A) Aldol Condensation
(B) Cannizzaros's reaction
(C) Haloform reactions
(D) Acid-Catalyzed reactions
12. Which one has yellow or orange crystalline ppt?
(A) Acetone hydrazone
(B) 2,4-DNPH
(C) Ethanaloxime
(D) Bisulphite addition product
13. .............. is aromatic acid:
(A) Propanoic acid
(B) Ethanoic acid
(C) Butanoic acid
(D) Phthalic acid
14. Banana flavor is given by the ester:
(A) Oclyl acetate
(B) Amyl butyrate
(C) Amyl acetate
(D) Ethyl butyrate
15. Ester benzyl acetate has the flavour:
(A) Banana
(B) Apricot
(C) Orange
(D) Jasmine
16. The macronutrients are required in quantities ranging from:
(A) $\quad 4-40 \mathrm{~kg}$ per acre
(B) 10-100 kg per acre
(C) $\quad 5-100 \mathrm{~kg}$ per acre
(D) 5-200 kg per acre
17. Micro-nutrient is required in quantity for plant growth ranging from:
(A) $\quad 4-40 \mathrm{gm}$
(B) $\quad 6-200 \mathrm{gm}$
(C) $6-200 \mathrm{~kg}$
(D) $4-40 \mathrm{~kg}$

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| Test Syllabus: | Unit-4, Unit-5, Unit-6, Unit-11, Unit-12, Unit-13, Unit-15, |  |  |  |  |

## (SECTION-I)

2- Write short answers to any EIGHT (8) of the following questions.
$(8 \times 2=16)$
(i) Write two reactions for the preparation of dinitrogen oxide.
(ii) What happens when following compounds are heated with conc. $\mathrm{H}_{2} \mathrm{SO}_{4}$ ? (a) $\mathrm{C}_{6} \mathrm{H}_{12} \mathrm{O}_{6}$ (b) $\mathrm{H}_{2} \mathrm{C}_{2} \mathrm{OH}$
(iii) Arrange these ions in order of increasing size: $\mathrm{F}^{-}, \mathrm{I}^{-}, \mathrm{Cl}^{-}, \mathrm{Br}^{-}$
(iv) How bleaching powder is prepared by Hasenclever'smethod?
(v) How will you distinguish between 2-pentanone and 3-pentanone?
(vi) How can you chemically distinguish between propene and propyne? (vii) What are fatty acids? Give an example.
(viii) Give reaction of Acetic acid with HI. (ix) Write equation for reaction of acetic acid with sodium carbonate.
(x) How urea is prepared from Ammonia? (xi) Why nitrogen is necessary for plants? Give names of two nitrogen fertilizers?
(xii) Discuss reacting taking place in 1-7 days in setting of cement.

3- Write short answers to any EIGHT (8) of the following questions.
$(8 \times 2=16)$
(i) How does NO act as oxidizing agent? (ii) How does dil. $\mathrm{HNO}_{3}$ react with Cu and Mn ?
(iii) Why $\mathrm{SO}_{3}$ gas is dissolved in $\mathrm{H}_{2} \mathrm{SO}_{4}$ but not in water in contact process. (iv) Halogens are strong oxidizing agents justify?
(v) Why maximum paramagnetic strength is associated with the middle elements of d-block series?
(vi) What happens when ethyl alcohol reacts with thionyl chloride and Ammonia also mention reaction conditions?
(vii) Write the reaction of phenyl hydrazine with acetaldehyde and acetone. (viii) What is "Fehling's solution test" of aldehyde?
(ix) Write down four uses of formaldehyde? (x) What is vinegar? How is it prepared from ethyl alcohol?
(xi) Write average composition of cement. (xii) Which type of calcarious raw material is used in cement?

4- Write short answers to any SIX (6) of the following questions.
( $6 \times 2=12$ )
(i) How $\mathrm{NO}_{2}$ is prepared from?
(a) $\mathrm{Pb}\left(\mathrm{NO}_{3}\right)_{2}$ (b)
(b) Cu and $\mathrm{HNO}_{3}$
(ii) $\mathrm{P}_{2} \mathrm{O}_{5}$ is a powerful dehydrating agent, prove by giving two examples? (iii) Describe H -Bonding in HF molecule?
(iv) Write any two methods of preparation of chlorine dioxide.
(v) What happens when bleaching powder react with (a) dil. $\mathrm{H}_{2} \mathrm{SO}_{4} \quad$ (b) $\mathrm{NH}_{3}$.
(vi) Why are alcohols, phenols and ethers considered as derivates of water?
(vii) How will you distinguish between a tertiary alcohol and a primary alcohol. (viii) Write any four uses of acetic acid.
(ix) Define Cement and give its essential constituents.

## (SECTION-II)

## Attempt any THREE (3) questions.

$(3 \times 8=24)$
5.(a) Sulphuric acid acts as an oxidizing agent and a dehydrating agent, describe two reactions in each case?
(b) Explain Beckmann's method for preparation of Bleaching Powder?
6. (a) Give the uses of phenols. How bakelite is prepared from it.
(b) Define condensation reactions. Describe aldolcondensation reaction mechanism for ethanal.
7.(a) Using ethyne as a starting material how would you get acetaldehyde, acetone and ethyl alcohal?
(b) Convert acetic acid into i) Methane ii) Acetyl chloride
8.(a) How does ethyl alcohol reacts with the following reagents: i) Conc. $\mathrm{H}_{2} \mathrm{SO}_{4}$ ii) Na
iii) $\mathrm{CH}_{3} \mathrm{COOH}$
iv) $\mathrm{SOCl}_{2}$
(b) How 2,4-dinitrophenylhydrazones are prepared? Write mechanism of reaction of ammonia derivatives with carbonyl compound in general?
9.(a) What is glacial acetic acid? Write down any three methods to prepare acetic acid?
(b) Write a note on acidic behavior of phenol.

## MCQs Ans Key.

| $\mathrm{Q}: 1(\mathrm{~A})$ | $\mathrm{Q}: 2(\mathrm{~B})$ | $\mathrm{Q}: 3(\mathrm{D})$ | $\mathrm{Q}: 4(\mathrm{~B})$ | $\mathrm{Q}: 5(\mathrm{~B})$ | $\mathrm{Q}: 6(\mathrm{~A})$ |
| :--- | :--- | :--- | :--- | :--- | :--- |
| $\mathrm{Q}: 7(\mathrm{D})$ | $\mathrm{Q}: 8$ (D) | $\mathrm{Q}: 9(\mathrm{C})$ | $\mathrm{Q}: 10(\mathrm{~A})$ | $\mathrm{Q}: 11(\mathrm{~B})$ | $\mathrm{Q}: 12(\mathrm{~B})$ |
| $\mathrm{Q}: 13(\mathrm{D})$ | $\mathrm{Q}: 14(\mathrm{C})$ | $\mathrm{Q}: 15(\mathrm{D})$ | $\mathrm{Q}: 16(\mathrm{D})$ | $\mathrm{Q}: 17(\mathrm{~B})$ |  |

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| Name: |  | Roll\#: |  | Class: | Inter Part-II |
| :--- | :--- | :--- | :--- | :--- | :--- |
| Subject: | English-12 | Date: |  | Time: |  |
| Test Type \# | Type 9 - Full Test - Board Paper Pattern - Marks=100 |  |  |  |  |
| Test Syllabus: | Unit-1, Unit-3, Unit-11, Unit-14, Unit-17, Unit-18, Unit-19, Unit-20, Unit- <br> 21, Unit-22, Unit-23, Unit-24, Grammar \& Composition, |  |  |  |  |

## (A)-Choose the correct option of under-lined words from Book-2 Part-I.

(1) Nervous habits are not easy to uproot:
(2) The boy must take himself by the collar:
(3) It is always to the detriment of their health:
(A) get rid of
(B) nurture
(C) appreciated
(D) rejected
(A) strictly
(B) by neck
(C) deal firmly
(B) loss
(A) gain
(C) benefit
(D) good

## (B)- Choose the correct option of under-lined words from Book-2 Part-II.

(4) The writer put a blot and a few
(A) marks
(B) pictures
(C) drawings
(D) circles smudges on the paper:
(A) manifestation (B) duty
(C) relief
(D) exercise of drill for him:
(6) Churchill continued in this
(A) priviliged
(B) uncultivated
(C) superious
(D) unassuming unpretentious situation for nearly a year.
(C)- Choose the correct option of under-lined words from Goodbye Mr. Chips.
(7) Mrs. Wickett's house was ugly and pretentious:
(A) wisde
(B) dirty
(C) showy
(D) odd
(8) He did not want to talk to
(A) invitations
(B) requests
(C) comments
(D) commiserations anybody or to receive condolences.
(9) With autumn gales rattling the windows.
(10) Chips had no private means.
(A) closing
(B) opening
(C) polishing
(D) clattering
(A) relations
(B) problems
(C) sources
(D) troubles
(D)- Choose the correct option of appropriate prepositions.
(11) Take care $\qquad$ your
(A) of
(B) for
(C) about
(D) in
(12)
health.
smoking:
$\qquad$ (A) to
(B) of
(C) from
(D) with
(13)

He is yelling $\qquad$ his
servant.
(14)

The chair is made $\qquad$ wood.
(B) $a t$
(C) for
(D) to
(A) over
(A) of
(B) with
(C) from
(D) it
(15)
We should not hate the poors.
(A) We should not hate the poor.
(B) We should not hate poors.
(C) We should not hate with poors.
(D) We should
(E)-Choose the correct sentence.
(16) Ten deers are sitting in the forest.
(A) Ten deer are sitting in the forest.
(B) Ten deer is sitting in the forest.
(C) Ten deers are sitting on the forest.
(D) Ten deers is sitting in the forest.
(17) I have headache:
(A) I have an headache.
(B) I have a headache.
(C) I have the headache.
(D) I has an headache. (18) Work hard lest you may fail.
(A) work hard lest you should fail
(B) work hard lest you will fail
(C) work hard lest you fail
(D) work hard if you should fail
(19) We enjoyed during the holidays.
(A) we enjoyed ourselves during the holidays
(B) we ourselves enjoyed during the holidays
(C) we enjoyed during the vacations
(D) we enjoyed during the holidays
(20) One must obey his eldes.
(A) One must obey one's elders. (B) One must obey their elders. (C) One must obey the elders.
(D) One must obey his elders.

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## (SECTION-I)

2- Answer the following any SIX questions from Book-II Part-I.
( $6 \times 2=12$ )
(i) Why is the universe so frightening? (ii) What is a planetary system? (iii) What is an absolute zero?
(iv) What is the place of our earth in the universe? (v) What is milky way?
(vi) What happened when the sars began to move away from the sun?
(vii) In which two classes does the writer divide the unsuccessful boys?
(viii) What is the advice of the author for the boys suffering from poor health?
(ix) How can poor students be helped by college?

3- Answer the following any SIX questions from Book-II Part-II.
( $6 \times 2=12$ )
(i) Who was Churchill? (ii) How did he do his Latin paper?
(iii) Churchill was taught English at Harrow and not Latin and Greek. Was it a gain or loss?
(iv) Why does Churchill emphasize on learning English?
(v) What are Churchill's views about Mr. Welldon his head-master at Harrow? (vi) How did Lister kill germs?
(vii) How did Pasteur prove that spontaneous generation was not a fact?
(viii) What help did Pasteur render in curing the silkworm disease in France? (ix) Describe rabies.

4- Answer the following any EIGHT questions from the Novel Goodbye
( $8 \times 2=16$ )

## Mr.Chips.

(i) Where did Mr. Chips live after his retirement? (ii) Who was Colley? (iii) What did Chips say to the son of first Colley?
(iv) Describe the rise and fall of Brookfield. (v) What was the social and academic status of Chips?
(vi) What was published in the 'Times' and what was its value?
(vii) What is the most interesting and exciting incident of the novel? Give brief answer.
(viii) Draw a character sketch of Katherine Bridges. (ix) Why Chips was against to play soccer match with Poplar School?
(x) How and when Katherine die? (xi) Who was Faulkner? (xii) When and how did Mr. Wetherby die?

## (SECTION-II)

5- Write an Essay (300-400 words) on any ONE of the following topics.
(i) My Ideal Personality (ii) Importance of Computer (iii) Technical Education (iv) Curbing Child Abuse

6- Use any FIVE of the following idioms/phrases in sentence of your own.
(i) a hard pill to swallow (ii) deal in (iii) French leave (iv) broken reed (v) cut off (vi) a bone of contention
(vii) a brain wave (viii) an open secret

7- Translate the following passage into English.

## MCQs Ans Key.

| $\mathrm{Q}: 1(\mathrm{~A})$ | $\mathrm{Q}: 2(\mathrm{C})$ | $\mathrm{Q}: 3(\mathrm{~B})$ | $\mathrm{Q}: 4(\mathrm{~A})$ | $\mathrm{Q}: 5(\mathrm{D})$ | $\mathrm{Q}: 6(\mathrm{~B})$ |
| :--- | :--- | :--- | :--- | :--- | :--- |
| $\mathrm{Q}: 7(\mathrm{~B})$ | $\mathrm{Q}: 8$ (D) | $\mathrm{Q}: 9(\mathrm{D})$ | $\mathrm{Q}: 10(\mathrm{C})$ | $\mathrm{Q}: 11(\mathrm{~B})$ | $\mathrm{Q}: 12(\mathrm{C})$ |
| $\mathrm{Q}: 13(\mathrm{~B})$ | $\mathrm{Q}: 14(\mathrm{~A})$ | $\mathrm{Q}: 15(\mathrm{~A})$ | $\mathrm{Q}: 16(\mathrm{~A})$ | $\mathrm{Q}: 17(\mathrm{C})$ | $\mathrm{Q}: 18(\mathrm{C})$ |
| $\mathrm{Q}: 19(\mathrm{~A})$ | $\mathrm{Q}: 20(\mathrm{~A})$ |  |  |  |  |

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| Subject: | English-12 | Time: |  |  |  |
| Test Type \# | Type 9 - Full Test - Board Paper Pattern - Marks=100 |  |  |  |  |
| Test Syllabus: | Unit-5, Unit-7, Unit-9, Unit-15, Unit-25, Unit-26, Unit-27, Unit-28, Unit- <br> 29, Unit-30, Unit-31, Unit-32, Unit-33, Unit-34, Grammar \& Composition , |  |  |  |  |

(A)-Choose the correct option of under-lined words from Book-2 Part-I.
(1) In my agony of decision, I left the embankment.
(2) An idiot hope struck me that they
(A) pane
(B) sane
(C) help
(D) pain might think someone had insulted me.
(3) Reckless with misery, I made a plunge.
(A) foolish
(B) absurd
(C) wrong
(D) sharp
(A) energy
(B) labour
(C) trouble
(D) enjoyment
(B)-Choose the correct option of under-lined words from Book-2 Part-II.
(4) The Turks were infuriated by the
(A) fascinated
(B) inflated
(C) angry
(D) pleased occupants:
(5) Their conception was loyalty to
(A) king
(B) monarch
(C) truce
(D) accord armistice.
(6) Mustafa Kamal appointed
(A) mutiny
(B) love
(C) hatred
(D) attraction representatives to form the centers of patriotic revolt.
(C)- Choose the correct option of under-lined words from Goodbye Mr. Chips.
(7) The legendary lady was sitting like a crumbling wooden doll.
(8) Chips began his usual ritualistic blending of tea from the different caddies:
(9) The story was told, retold and embellished:
(A) breaking into
(B) shivering
(C) shinning
(D) soft
(A)
(B) sensational
(C) typical
(D) hasty
(A) rejected
(B) corrected
(C) exaggerated
(D) concocted
(A) coward
(B) sad
(C) brave
(D) happy dauntless, clever and impudent.
(D)- Choose the correct option of appropriate prepositions.
(11) He is ignorant $\qquad$ his
(A) in
(B) of
(C) to
(D) on demerits.
(12) Aslam always boast $\qquad$ (A) for
(B) over
(C) of
(D) on
his wealth:
(13) She takes pride $\qquad$ (A) on
(B) of
(C) for
(D) in
her beauty.
(14) The police opened fire $\qquad$ (A) on
(B) at
(C) for
(D) from the protesters.
(15) No one should speak a lie.
(A) no one should speak lie.
(B) no one should tell a lie.
(C) no one
(D) no one should have tell a lie. should have tell the lie.

## (E)- Choose the correct sentence.

(16) He is M. A. in English.
(A) He is a M. A. in English. (B) He is an M. A. in English. (C) He is an M. A. in the English.
(D) He is the M. A. in English.
(17) She said that she was wrong:
(A) She said that she is in wrong.
(B) She said that she was in the wrong.
(C) She said that she is in the wrong.
(D) She said that she is wrong.
(18) Either you or I are wrong:
(A) Either you or I have wrong.
(B) Either you or me are wrong.
(C) Either you or I is wrong.
(D) Either you or I am wrong.

The patient died before the doctor came.
(19)(A) The patient died before the doctor come. (B) The patient died before the doctor had come.
(C) The patient had died before the doctor came. (D) The patient die before the doctor had come. (20) I could not help without weeping.
(A) I could not help without weeping.
(B) I could not help weeping without.
(C) I could not helping without weep.
(D) I could not help weeping.

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## (SECTION-I)

2- Answer the following any SIX questions from Book-II Part-I.
( $6 \times 2=12$ )
(i) What was the mental state of the writer when he set out to throw the books into the river?
(ii) Justify the author's act of destroying books?
(iii) How did the writer muster up courage at last to fling the books into the river?
(iv) What did the writer think of books while returning home? (v) Why did the writer decide to destroy the useless books?
(vi) Why did the manager think that Leacock had an awful secret to reveal?
(vii) What did the clerk ask in surprise when the writer gave him the cheque?
(viii) Briefly discribe the reaction of the bank officials when Stephen Leacock left the bank.
(ix) Why did the people in the bank have the impression that Leacock was an invalid millionaire?

3- Answer the following any SIX questions from Book-II Part-II.
$(6 \times 2=12)$
(i) What were the activities of Mustafa Kamal at Anatolia?
(ii) Describe Mustafa Kamal's reforms regarding industrial developemnt. (iii) How did Mehmet escape from Istanbul?
(iv) Describe the event of war between the Greeks and the Turk patriots.
(v) Which changes did Mustafa Kamal introduce in the dress of women?
(vi) What reforms did Mustafa Kamal bring in Turkish language?
(vii) What steps did Mustafa Kamal take for the industrial and economic development?
(viii) What was the attitude of the Turkish government towards the Allies after the World War I?
(ix) What was the reason of the failure of Mehmat's Plan?

4- Answer the following any EIGHT questions from the Novel Goodbye Mr.Chips.
(i) How did Chips take attendance and what was special about it? (ii) Why did Chatteris look worried?
(iii) Why did Chatteris request Mr. Chips to join Brookfield School again?
(iv) What was the contribution of Brookfield during the World War I? (v) What do you know about the General Strike?
(vi) How did the Brookfield boys help the people during the general strike of 1926 ?
(vii) What were those things which Chips could never do in his life?
(viii) Where did Mrs. Wickett go and what sort of arrangements did she make for Chips?
(ix) What happened to Chips when Linford departed? (x) Why did Chips become sad after Linford's departure?
(xi) What changes did the death of Kathrine bring in Mr. Chips? (xii) What did Cartwright say about the children of Mr. Chips?

## (SECTION-II)

5- Write an Essay (300-400 words) on any ONE of the following topics.
(i) Computer: a Blessing or a Curse (ii) Life in a Big City (iii) Education for Women (iv) Inflation

6- Use any FIVE of the following idioms/phrases in sentence of your own.
(i) bear out (ii) turn down (iii) turn up (iv) get over (v) run out (vi) with a view to (vii) to kick the bucket (viii) to be sick of

7- Translate the following passage into English.
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## MCQs Ans Key.

| $\mathrm{Q}: 1(\mathrm{D})$ | $\mathrm{Q}: 2(\mathrm{~A})$ | $\mathrm{Q}: 3(\mathrm{C})$ | $\mathrm{Q}: 4(\mathrm{C})$ | $\mathrm{Q}: 5(\mathrm{C})$ | $\mathrm{Q}: 6(\mathrm{~A})$ |
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