G.PULLAIAH COLLEGE OF ENGINEERING& TECHNOLOGY **SET-1**

B. Tech II Year-II Semester (R15) I MID OBJECTIVE EXAMINATION

MATHEMATICS-IV (Common to ECE & EEE)

Time: 20 Min **Roll No: _____** **Date: 28-02-18**

1) $\Gamma(\frac{1}{3})\Gamma(\frac{2}{3}) =$..... [ ]

a) $\frac{\pi}{3}$ b) $\frac{\pi}{\sqrt{3}}$ c) $\frac{2\pi}{3}$ d) $\frac{2\pi}{\sqrt{3}}$

2)$\beta(m,n) - \beta(n,m) =$ ..... [ ]

a) $\beta(m-n, n-m)$ $b)$ $\beta(m+n, m+n)$ c)$\beta(mn, mn)$ d) 0

3)$\int_0^{\frac{\pi}{2}} \sqrt{tan\theta}$ dθ=..... [ ]

a) $\frac{\pi}{2}$ b)$\frac{\pi}{\sqrt{2}}$ c)$\frac{\sqrt{\pi}}{2}$ d)$\sqrt{\frac{\pi}{2}}$

4)$\int_0^1 x^4(1-x)^2$ dx=..... [ ]

a) $\frac{1}{56}$ b) $\frac{1}{105}$ c) $\frac{1}{168}$ d) $\frac{1}{280}$

5) Γ(n)Γ(1-n)=..... [ ]

a) $\pi sinn\pi$ b) $\pi\, cosn\pi$ c) $\pi\, cosecn\pi$ d) $\pi\, secn\pi$

6) $\Gamma\left(\frac{-3}{2}\right) = \cdots \ldots \ldots \ldots \ldots \ldots \ldots \ldots$ [ ]

a) $\frac{\sqrt{\pi}}{3}$ b) $\frac{\sqrt{-\pi}}{3}$ c) $\frac{4\sqrt{\pi}}{3}$ d) $\frac{-4\sqrt{\pi}}{3}$

7) Γ(1)=..... [ ]

a) 0 1) 1 c) 2 d) ∞

8) If n is a positive integer, Γ(n)=..... [ ]

a)(n-1)! b) n! c) (n+1)! D) (n+2)!

9) $\beta(m,n)\Gamma(m+n) = \cdots \ldots \ldots \ldots \ldots \ldots \ldots, m > 0, n > 0$ [ ]

a) Γ(mn) b) Γ(m)+Γ(n) c) Γ(m) Γ(n) d) Γ(m)-Γ(n)

10) $\beta\left(\frac{3}{2}, \frac{3}{2}\right) =$..... [ ]

a) $\frac{\pi}{8}$ b) $\frac{\pi}{6}$ c) $\frac{\pi}{4}$ d) $\frac{\pi}{2}$

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B. Tech II Year-II Semester (R15) I MID OBJECTIVE EXAMINATION

MATHEMATICS-IV (Common to ECE & EEE)

Time: 20 Min **Roll No: _____** **Date: 28-02-18**

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a) $\frac{\pi}{8}$ b) $\frac{\pi}{6}$ c) $\frac{\pi}{4}$ d) $\frac{\pi}{2}$

11) $(2n+1)xp_n(x) - nP_{n-1}(x) =$..... [ ]

a) $P_{n+1(x)}$ b) $(n+1)P_{n+1}(x)$ c) $xP_n^I(x)$ d) None

12)) The value of $J_n(-x)$ =..... [ ]

a) $J_n(x)$ b) $(-1)^n J_n(x)$ c) $(-1)^{n+1} J_n(x)$ d)none

13) $\frac{d}{dx}\left[x^n J_n(x)\right]=$ ..... [ ]

a) $x^n J_{n-1}(x)$ b) $-x^{-n} J_{n+1}(x)$ c) $-x^n J_{n-1}(x)$ d)None

14) The value of $P_n(1)$ =..... [ ]

a) 0 b) 1 c) -1 d) None

15) The value of $P'_{n+1}(x) - P'_{n-1}(x) =$ [ ]

a) $nP_n(x)$ b) $(2n+1)P_n(x)$ c) $(2n-1)P_n(x)$ d)None

16)$J_n^I(x) - \frac{n}{x}J_n(x) =$ ..... [ ]

a) $J_n(x)$ b) $J_{n-1}(x)$ c)$-J_{n+1}(x)$ d)none

17) The value of $P_1(x) =$..... [ ]

a) 1 b) x c) -1 d)None

18) The value of $P_n(-1) =$..... [ ]

a) 1 b) $(-1)^n$ c) $(1)^n$ d)None

19) The..... value of $(-1)^n P_n(x)$ is [ ]

a) $P_n(-x)$ b) $P_n(x)$ c) $(-1)^n P_n(x)$ d)none

20) The value of $J_{\frac{-1}{2}}(x)$ is [ ]

a) $\sqrt{\frac{2}{\Pi x}}\sin x$ b) $\frac{2}{\Pi x}\cos x$ c) $\sqrt{\frac{2}{\Pi x}}\cos x$ d)none

11) $(2n+1)xp_n(x) - nP_{n-1}(x) =$..... [ ]

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G.PULLAIAH COLLEGE OF ENGINEERING& TECHNOLOGY **SET-2**

B. Tech II Year-II Semester (R15) I MID OBJECTIVE EXAMINATION

MATHEMATICS-IV (Common to ECE & EEE)

Time: 20 Min **Roll No: _____** **Date: 28-02-18**

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a) $\frac{\sqrt{\pi}}{3}$ b) $\frac{\sqrt{-\pi}}{3}$ c) $\frac{4\sqrt{\pi}}{3}$ d) $\frac{-4\sqrt{\pi}}{3}$

2) Γ(1)=…… [ ]

a) 0 b) 1 c) 2 d) ∞

3) If n is a positive integer, Γ(n)=…….. [ ]

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4) $\beta(m,n)\Gamma(m+n) = \cdots \ldots \ldots \ldots \ldots \ldots \ldots, m > 0, n > 0$ [ ]

a)Γ(mn) b) Γ(m)+Γ(n) c) Γ(m) Γ(n) d)Γ(m)-Γ(n)

5) $\beta\left(\frac{3}{2},\frac{3}{2}\right)$ =…….. [ ]

a) $\frac{\pi}{8}$ b) $\frac{\pi}{6}$ c) $\frac{\pi}{4}$ d) $\frac{\pi}{2}$

6)$J_n^I(x) - \frac{n}{x}J_n(x) =$ …… [ ]

a) $J_n(x)$ b) $J_{n-1}(x)$ c)$-J_{n+1}(x)$ d)None

7) The value of $P_1(x) =$…… [ ]

a) 1 b) x c) -1 d)None

8) The value of $P_n(-1) =$…….. [ ]

a) 1 b)$(-1)^n$ c) $(1)^n$ d)None

9)) The value of $(-1)^n P_n(x)$ is [ ]

a) $P_n(-x)$ b) $P_n(x)$ c) $(-1)^n P_n(x)$ d)none

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a) $\sqrt{\frac{2}{\Pi x}}\sin x$ b) $\frac{2}{\Pi x}\cos x$ c) $\sqrt{\frac{2}{\Pi x}}\cos x$ d)none

G.PULLAIAH COLLEGE OF ENGINEERING& TECHNOLOGY **SET-2**

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a) $J_n(x)$ b) $J_{n-1}(x)$ c)$-J_{n+1}(x)$ d)None

7) The value of $P_1(x) =$…… [ ]

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a) 1 b)$(-1)^n$ c) $(1)^n$ d)None

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a) $\beta(m-n,n-m)$ $b)$ $\beta(m+n,m+n)$ c)$\beta(mn,mn)$ d) 0

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14)$\int_0^1 x^4(1-x)^2$ dx=…… [ ]

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15)$\Gamma(n)\Gamma(1-n)$=…… [ ]

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19) The value of $P_n(1)$ =…… [ ]

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G.PULLAIAH COLLEGE OF ENGINEERING& TECHNOLOGY **SET-3**

B. Tech II Year-II Semester (R15) I MID OBJECTIVE EXAMINATION

MATHEMATICS-IV (Common to ECE & EEE)

Time: 20 Min **Roll No: _____** **Date: 28-02-18**

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a) $J_n(x)$ b) $(-1)^n J_n(x)$ c) $(-1)^{n+1} J_n(x)$ d)None

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9) The value of $P_n(1)$ =..... [ ]

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a) $nP_n(x)$ b) $(2n+1)P_n(x)$ c) $(2n-1)P_n(x)$ d)None

G.PULLAIAH COLLEGE OF ENGINEERING& TECHNOLOGY **SET-3**

B. Tech II Year-II Semester (R15) I MID OBJECTIVE EXAMINATION

MATHEMATICS-IV (Common to ECE & EEE)

Time: 20 Min **Roll No: _____** **Date: 28-02-18**

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19) The value of $(-1)^n P_n(x)$ is [ ]

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G.PULLAIAH COLLEGE OF ENGINEERING& TECHNOLOGY **SET-4**

B. Tech II Year-II Semester (R15) I MID OBJECTIVE EXAMINATION

MATHEMATICS-IV (Common to ECE & EEE)

Time: 20 Min **Roll No: _____** **Date: 28-02-18**

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a) $J_n(x)$ b) $(-1)^n J_n(x)$ c) $(-1)^{n+1} J_n(x)$ d)None

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a) $x^n J_{n-1}(x)$ b) $-x^{-n} J_{n+1}(x)$ c) $-x^n J_{n-1}(x)$ d)None

4) The value of $P_n(1)$ =..... [ ]

a) 0 b) 1 c) -1 d) None

5) The value of $P'_{n+1}(x) - P'_{n-1}(x) =$ [ ]

a) $nP_n(x)$ b) $(2n+1)P_n(x)$ c) $(2n-1)P_n(x)$ d)None

6)$J_n^I(x) - \frac{n}{x}J_n(x) =$ ..... [ ]

a) $J_n(x)$ b) $J_{n-1}(x)$ c)$-J_{n+1}(x)$ d)None

7) The value of $P_1(x) =$..... [ ]

a) 1 b) x c) -1 d)None

8) The value of $P_n(-1) =$..... [ ]

a) 1 b)$(-1)^n$ c) $(1)^n$ d)None

9)) The value of $(-1)^n P_n(x)$ is [ ]

a) $P_n(-x)$ b) $P_n(x)$ c) $(-1)^n P_n(x)$ d)None

10) The value of $J_{\frac{-1}{2}}(x)$ is [ ]

a) $\sqrt{\frac{2}{\Pi x}}\sin x$ b) $\frac{2}{\Pi x}\cos x$ c) $\sqrt{\frac{2}{\Pi x}}\cos x$ d)None

G.PULLAIAH COLLEGE OF ENGINEERING& TECHNOLOGY **SET-4**

B. Tech II Year-II Semester (R15) I MID OBJECTIVE EXAMINATION

MATHEMATICS-IV (Common to ECE & EEE)

Time: 20 Min **Roll No: _____** **Date: 28-02-18**

1) $(2n+1)xp_n(x) - nP_{n-1}(x) =$..... [ ]

a) $P_{n+1(x)}$ b) $(n+1)P_{n+1}(x)$ c) $xP_n^I(x)$ d) None

2)) The value of $J_n(-x)$ =..... [ ]

a) $J_n(x)$ b) $(-1)^n J_n(x)$ c) $(-1)^{n+1} J_n(x)$ d)None

3) $\frac{d}{dx}\left[x^n J_n(x)\right]=$ ..... [ ]

a) $x^n J_{n-1}(x)$ b) $-x^{-n} J_{n+1}(x)$ c) $-x^n J_{n-1}(x)$ d)None

4) The value of $P_n(1)$ =..... [ ]

a) 0 b) 1 c) -1 d) None

5) The value of $P'_{n+1}(x) - P'_{n-1}(x) =$ [ ]

a) $nP_n(x)$ b) $(2n+1)P_n(x)$ c) $(2n-1)P_n(x)$ d)None

6)$J_n^I(x) - \frac{n}{x}J_n(x) =$ ..... [ ]

a) $J_n(x)$ b) $J_{n-1}(x)$ c)$-J_{n+1}(x)$ d)None

7) The value of $P_1(x) =$..... [ ]

a) 1 b) x c) -1 d)None

8) The value of $P_n(-1) =$..... [ ]

a) 1 b)$(-1)^n$ c) $(1)^n$ d)None

9)) The value of $(-1)^n P_n(x)$ is [ ]

a) $P_n(-x)$ b) $P_n(x)$ c)$(-1)^n P_n(x)$ d)None

10) The value of $J_{\frac{-1}{2}}(x)$ is [ ]

a) $\sqrt{\frac{2}{\Pi x}}\sin x$ b) $\frac{2}{\Pi x}\cos x$ c) $\sqrt{\frac{2}{\Pi x}}\cos x$ d)None

11)$\Gamma(\frac{1}{3})\Gamma(\frac{2}{3})$ =…… [ ]

a) $\frac{\pi}{3}$ b) $\frac{\pi}{\sqrt{3}}$ c) $\frac{2\pi}{3}$ d) $\frac{2\pi}{\sqrt{3}}$

12)$\beta(m,n)-\beta(n,m)=$ …… [ ]

a) $\beta(m-n,n-m)$ $b)$ $\beta(m+n,m+n)$ c)$\beta(mn,mn)$ d) 0

13)$\int_0^{\frac{\pi}{2}}\sqrt{tan\theta}$ dθ=…… [ ]

a) $\frac{\pi}{2}$ b)$\frac{\pi}{\sqrt{2}}$ c)$\frac{\sqrt{\pi}}{2}$ d)$\sqrt{\frac{\pi}{2}}$

14)$\int_0^1 x^4(1-x)^2$ dx=…… [ ]

a) $\frac{1}{56}$ b) $\frac{1}{105}$ c) $\frac{1}{168}$ d) $\frac{1}{280}$

15)Γ(n)Γ(1-n)=…… [ ]

a) $\pi sinn\pi$ b) $\pi\, cosn\pi$ c) $\pi\, cosecn\pi$ d) $\pi\, secn\pi$

16) $\Gamma\left(\frac{-3}{2}\right)=\cdots\ldots\ldots\ldots\ldots\ldots\ldots$ [ ]

a) $\frac{\sqrt{\pi}}{3}$ b) $\frac{\sqrt{-\pi}}{3}$ c) $\frac{4\sqrt{\pi}}{3}$ d) $\frac{-4\sqrt{\pi}}{3}$

17) Γ(1)=…… [ ]

a) 0 1) 1 c) 2 d) ∞

18) If n is a positive integer, Γ(n)=…….. [ ]

a)(n-1)! b) n! c) (n+1)! D) (n+2)!

19) $\beta(m,n)\Gamma(m+n)=\cdots\ldots\ldots\ldots\ldots\ldots\ldots,m>0,n>0$ [ ]

a)Γ(mn) b) Γ(m)+Γ(n) c) Γ(m) Γ(n) d)Γ(m)-Γ(n)

20) $\beta\left(\frac{3}{2},\frac{3}{2}\right)=$…….. [ ]

a) $\frac{\pi}{8}$ b) $\frac{\pi}{6}$ c) $\frac{\pi}{4}$ d) $\frac{\pi}{2}$

11)$\Gamma(\frac{1}{3})\Gamma(\frac{2}{3}) =$…… [ ]

a) $\frac{\pi}{3}$ b) $\frac{\pi}{\sqrt{3}}$ c) $\frac{2\pi}{3}$ d) $\frac{2\pi}{\sqrt{3}}$

12)$\beta(m,n) - \beta(n,m) =$ …… [ ]

a) $\beta(m-n, n-m)$ $b)$ $\beta(m+n, m+n)$ c)$\beta(mn, mn)$ d) 0

13)$\int_0^{\frac{\pi}{2}} \sqrt{tan\theta}$ dθ=…… [ ]

ab) $\frac{\pi}{2}$ b)$\frac{\pi}{\sqrt{2}}$ c)$\frac{\sqrt{\pi}}{2}$ d)$\sqrt{\frac{\pi}{2}}$

14)$\int_0^1 x^4(1-x)^2$ dx=…… [ ]

a) $\frac{1}{56}$ b) $\frac{1}{105}$ c) $\frac{1}{168}$ d) $\frac{1}{280}$

15)Γ(n)Γ(1-n)=…… [ ]

a) $\pi sinn\pi$ b) $\pi\, cosn\pi$ c) $\pi\, cosecn\pi$ d) $\pi\, secn\pi$

16) $\Gamma\left(\frac{-3}{2}\right) = \cdots$ … … … … … … … … [ ]

a) $\frac{\sqrt{\pi}}{3}$ b) $\frac{\sqrt{-\pi}}{3}$ c) $\frac{4\sqrt{\pi}}{3}$ d) $\frac{-4\sqrt{\pi}}{3}$

17) Γ(1)=…… [ ]

a) 0 1) 1 c) 2 d) ∞

18) If n is a positive integer, Γ(n)=…….. [ ]

a)(n-1)! b) n! c) (n+1)! D) (n+2)!

19) $\beta(m,n)\Gamma(m+n) = \cdots$ … … … … … … …. , $m > 0, n > 0$ [ ]

a)Γ(mn) b) Γ(m)+Γ(n) c) Γ(m) Γ(n) d)Γ(m)-Γ(n)

20) $\beta\left(\frac{3}{2}, \frac{3}{2}\right) =$…….. [ ]

a) $\frac{\pi}{8}$ b) $\frac{\pi}{6}$ c) $\frac{\pi}{4}$ d) $\frac{\pi}{2}$